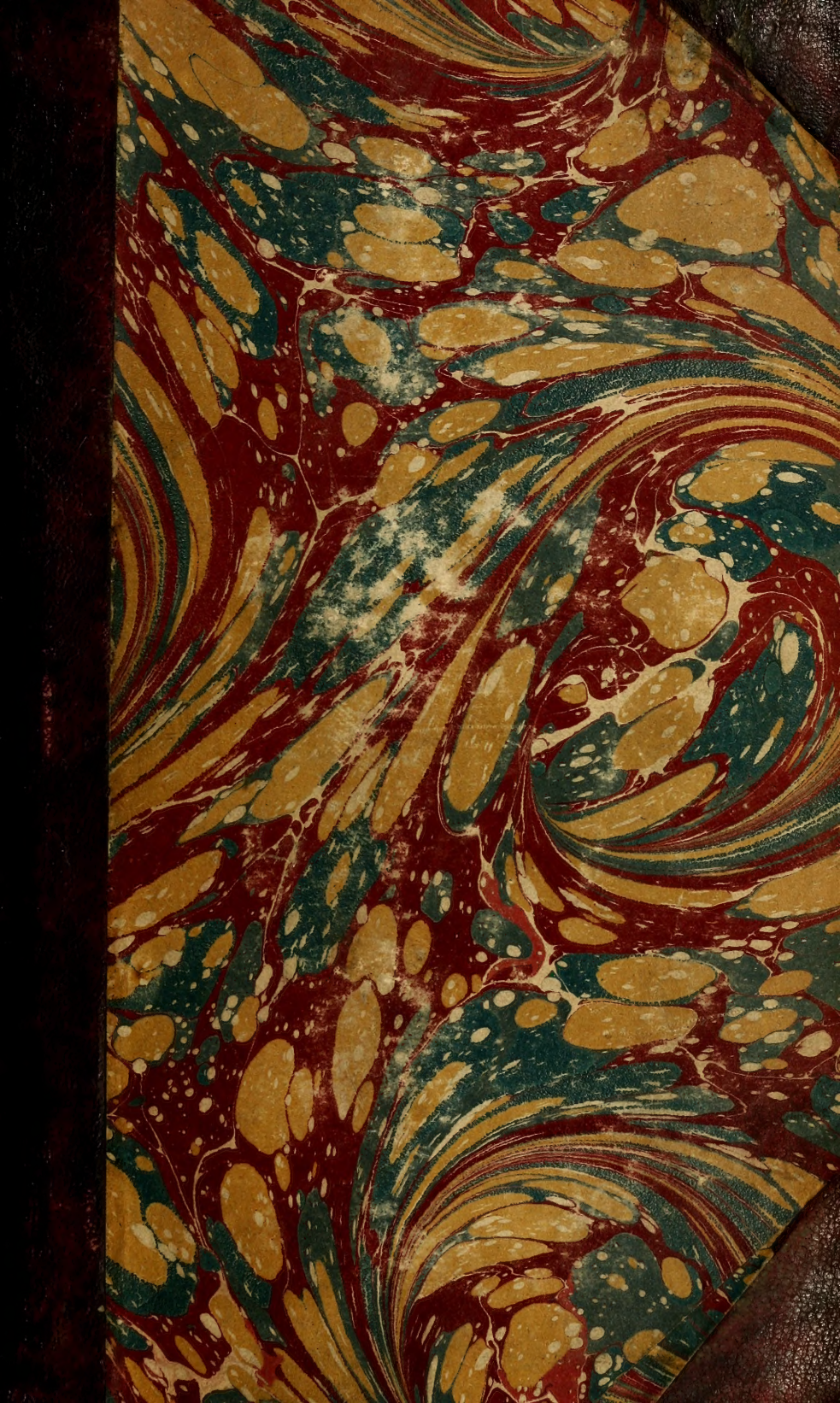
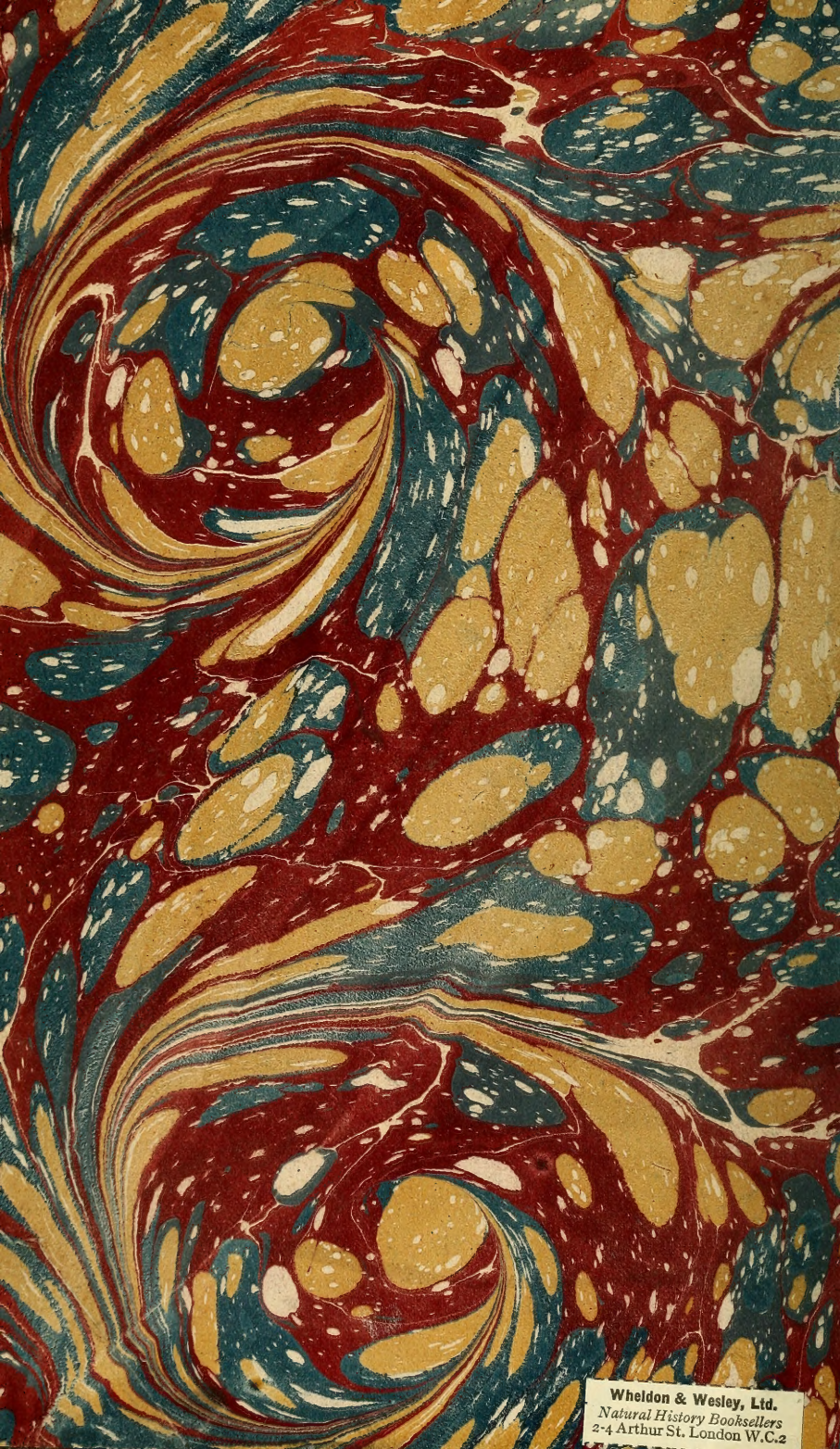


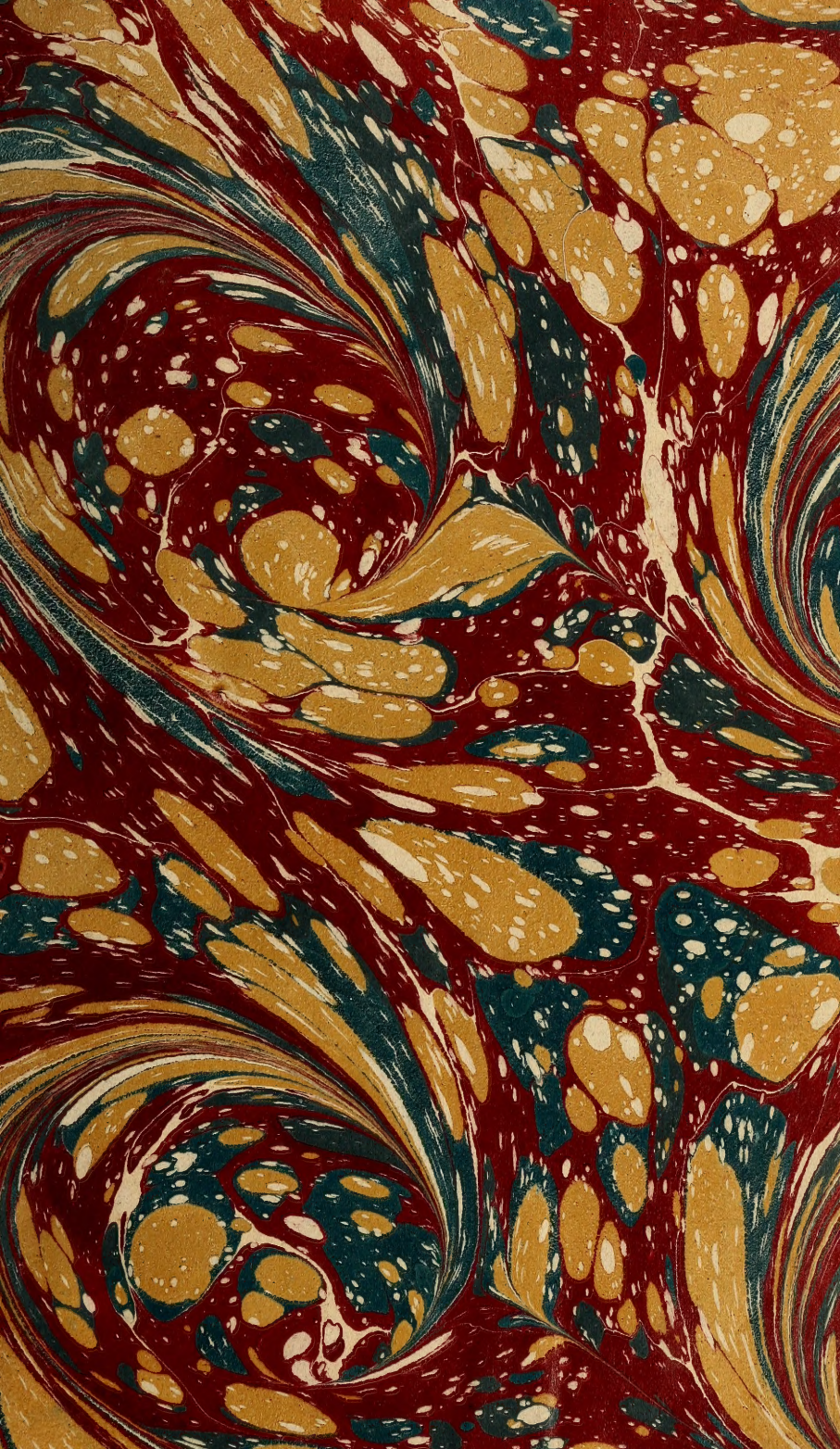


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Edward S. Marshall

1889

PHYTOLOGIST

OF THE BOTANICAL GARDEN



ALFRED R. HENNING

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The University of Cambridge, England

Printed by the University Press, Cambridge

1889

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James Smith
1807

THE
PHYTOLOGIST.

A BOTANICAL JOURNAL.



EDITED BY
ALEXANDER IRVINE,

FELLOW OF THE BOTANICAL SOCIETY OF LONDON.

VOLUME THE FOURTH.

Ὡς ἐμεγαλύνῃ τὰ ἔργα σου, Κύριε!—πάντα ἐν σοφίᾳ ἐποίησας.

ΨΑΛΜ. γγ'. 24.

Benedicite universa germinantia in terra Domino; laudate et superexaltate
EUM in secula.—*Hymn. iii Pueror. v. 76.*

LONDON:
WILLIAM PAMPLIN, 45, FRITH STREET, SOHO SQUARE.

1860.

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A BOTANICAL JOURNAL

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1861

PREFACE.

To comply with established practice, and to fill an idle page, a preamble is required, rather by the necessities of the printer than by the readers or by the Editor. The Annual Address to our constituents has superseded the usual prefatory announcements, and has reduced this Preface to one of the expected customary formalities.

Our friends will see from our List of Contributors that our circle of correspondents is enlarged, and from our Index, that the variety and usefulness of the matter which constitutes this Volume, are not diminished; and our hope is that the contents of this new annual of British Phytology may prove as pleasant to the readers as they have been to the authors.

The summary or results, as usual, introduce the first number of our next or Fifth Volume, and a pretty confident expectation is expressed that the next year's 'Phytologist' will not be surpassed by its predecessor.

Note.—We have been repeatedly reminded that West Derby is near Liverpool, and the reviewer of the 'Species Filicum' has again been brought to book for his supposed ignorance of this fact. But the truth is that our reviewer did *not see* West Derby in the copy of the above-named work, because it is not there, but he saw West Derbyshire, which is there: and he very innocently corrected the geographical mistake.

The learned author of the 'Species Filicum,' whose topogra-

phical knowledge may possibly not be so extensive as his knowledge of Ferns is, we are assured, would not have called our correspondent a caviller for correcting a mistake in the most courteous terms possible.

Chelsea, Dec. 31st, 1860.

NOTICE TO CORRESPONDENTS.

All Communications for the 'Phytologist' may be addressed to "Mr. Irvine, 28, Upper Manor Street, Chelsea."

ERRATA IN VOL. IV.

- Page 29, last line, *for* Gardener *read* Gardner.
- Page 60, in eighth line from bottom, *for* give *read* gives.
- Page 82, line 20, *for* country *read* county.
- Page 249, line 18, *for* *Planta* *read* *Plantæ*.
- Page 256, line 20, *for* Barrer *read* Borrer.
- Page 309, last line, *for* George *read* Googe.
- Page 315, fourth line, *for* Agarial *read* Agrarial.

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THE PHYTOLOGIST.

1860.

ADDRESS to the Contributors, etc.

THE Editor has again to perform the agreeable duty of thanking the numerous correspondents of the 'Phytologist' for their liberal contributions, and also for their personal efforts to extend the circulation of the magazine. The list printed with this number, and intended to be bound up with the numbers issued during the past year, will show that our supporters are staunch and steady in their support of the Journal of Botany.

Our motto is, and has been, "a fair field and no favour." There is not the slightest ground for surmising that there is even a trace of partiality in the management. Every botanist, whatever be his social position or scientific repute, is entitled to record his observations in the 'Phytologist.' Editorial opinions are never obtruded; nor are any communications unnoticed,—it may be said, *unprinted*,—however unpleasing they may be to the Editor's feelings, or opposed to the results of his observations and experience.

Very cautious persons may mistake what is vulgarly termed "mares' nests," and more modishly "*canards*," for grave facts. But there is generally some sharp-sighted and humane correspondent on the watch to give due notice, to warn us of danger, and to prevent our walking into the trap with our eyes open.

One of the objects of confining each series of numbers within the limit of twelve months was that any fact recorded during the brief space of a year might be more easily referred to at a future period. It was urged, with truth, that it would be easier to hunt

out a note, remark, or observation in an annual than it would be in a biennial series. Another object was also suggested, viz., that it would be convenient to present our readers with a synopsis of what had been accomplished in the Science during the past year. This will be the staple of the present Address to our correspondents and readers. They are to be presented with what our *Gallic* neighbours elegantly entitle a *résumé, précis, or epitome*; we call such a paper an abridgment.

Our readers are *not* to be congratulated on receiving, as an addition to their botanical literature, two original descriptive Floras of the British Isles. The little that was published on British Botany during the past year would be soon chronicled.

There has appeared a new periodical, called 'Recreative Science,' which, like 'The Naturalist,' is of a comprehensive character. It has received the good word and kind wishes of the 'Phytologist.'

Mr. Sowerby's 'British Wild Flowers,' as we are informed by a correspondent, is behindhand both in time and promised quantity of matter. Inquiries have also been made about Sowerby's 'British Grasses,' still unfinished. It is to be hoped that these works are not "hanging fire."

The 'Botany of Ceylon,' by Mr. Thwaites and Dr. J. D. Hooker, is advancing steadily towards completion. An ample review of this valuable contribution to our literature will appear in this number of our publication.

The 'Species Filicum' of Sir W. J. Hooker, and the 'Index Filicum' of Thomas Moore, have advanced some steps, and are now appearing with greater regularity, or at briefer intervals.

The great work of Professor Agardh, on a new system of classification, does not appear to have made much progress in England. Has it been appreciated on the Continent? It was not neglected by the 'Phytologist.'

'Nature-printed Seaweeds' have appeared. Will any of our readers who possess the work send us a review of it?

On the whole, the most important contribution to British Botany during the past year is the 'Phytologist.'

In the November number there is a larger contribution to the British Flora than was ever communicated at one time since the days of the Father of British Botany, Mr. Ray. This item we leave to speak for itself. We have the more satisfactory duty

devolving on us of recording the discoveries of our friends and correspondents.

In the Thirsk Report, usually published monthly, there are recorded for the first time the following plants new to the British Isles, viz.:—*Galium debile*, Desvaux; *G. insubricum*, Lois.; *G. commutatum*, Jorden, has been already noticed,—two additional species to one genus, and both found within a not very extensive area. It is to be desired that Mr. Baker, the zealous patron of this genus, will distribute examples of these new British species, and collect the opinions of his botanical friends on the subject; and then write a plain statement about their specific characters and distinctive marks, and publish it in the 'Phytologist.'

Is *Barbarea intermedia*, Bor., a synonym of *B. præcox*, or *B. arcuata*, or *B. vulgaris*, of which there are more forms than one, or of *B. stricta*, or of *B. angustifolia* of Ehr., or of *B. angustana*, Boiss.? Some remarks on this form are come to hand, and will appear this month, if there be room.

Our Flora has been enriched with another suite of *Fumarias*. *F. agraria* has been adopted and discarded within the last ten or twelve years. *F. muralis*, Sond., a south of Europe plant, has been detected in Yorkshire. What do the conservatives and the learned author of the 'Cybele' say to this transgression of botanical boundaries? Our readers will learn when the second edition of the 'Cybele' appears, which it is hoped will be long *ante Græcas calendas*.

A more startling novelty than any of the above-mentioned was duly entered as a discovery during the past year, viz. *Blechnum alpinum*, an antarctic Fern, or at least one only known hitherto as a production of the Southern hemisphere. Grave doubts are entertained about the reality of this recently-announced fact. Some of our correspondents have hinted that there is probably a mistake to be apprehended. It is desirable that the doubt should be cleared up. The amiable author of the note on this discovery is requested to communicate any further information he may have received on this subject.

Salix undulata has been announced as detected among osiers in North Yorkshire.

Delphinium Ajacis has also been again announced as a production of the West of England. This is a South of Europe form

or species, and is said by some to be *D. Consolida*. of the 'Flora Græca.' Perhaps the Thirsk Natural History Society have some examples of this plant for distribution.

Glaucium phœniceum has also been observed between Shoreham and Brighton. It is a very rare visitant of our shores. It was also seen at Wandsworth a few years ago. It must therefore still retain its place in our British lists, but not as one of the erroneously recorded, as the learned authors of the 'London Catalogue' generously tell us.

Muscari racemosum has also recently been discovered on Gogmagog Hills, Cambridge. It was reported from Colchester nearly thirty years ago. It grew then on the debris of the ruined wall not far from St. Mary's Church. Is it there still? Are the remains of the old wall still there? Mr. Babington indorses the Cambridge station as a genuine one—that it is not a mere waif or stray in that place. This is high authority for determining the name and relations of the plant; but anybody who knows plants might determine whether it was a permanent growth of that station or only a straggler. It was well established in the Colchester locality, and it may have been there for centuries, and might continue for ages to come if the place remains undisturbed.

Another addition to the list of spontaneous-growing British plants is *Claytonia alsinoides*, of which numerous and good specimens have been received. Further notice of this interesting addition would be unnecessary; its locality and distinctive characters are recorded in our last year's issues (*see* Index); but it may not be superfluous to remark that this plant was recorded in Baxter's 'Genera of British Plants,' but was entirely neglected, or ignored, or abandoned by all subsequent writers on British botany—for what reason conjecture must be silent. The Editor respectfully directs attention to the work above quoted, which, like the rare gem it rescued from oblivion, has been produced not to blush unseen, but it has seldom or ever been consulted by the compilers of British Floras. Who quotes Baxter's 'Genera of British Plants'? It is to be hoped that some enterprising publisher will undertake and publish a new edition of this valuable work.

Asperula arvensis and *Amaranthus Blitum* have both been reported from stations much further from the South of England than the usually recorded localities of these very uncertain plants.

From Sydenham several interesting plants have been received, most of them suspected aliens, but none of them were ever mentioned before last summer as growing there.

Among these may be noticed—*Hypericum calycinum* and *Vinca minor*, growing together, not very plentiful, but long established; and not far off from them, *Euphorbia Cyparissias* in great profusion, but evidently the descendants of garden plants.

Verbascum Lychnites grow plentifully on a large heap of shingle, or gravel, or ballast, brought from Stoa's-nest, below Croydon, to cover the roads. This plant will not probably grow long there, because the material will be required for another purpose.

The most interesting addition to our knowledge of localities for rare plants in this quarter (Sydenham) is the discovery of a situation for *Sedum sexangulare*, a plant which has not been observed growing spontaneously in England for a great many years. The only recorded locality near Sydenham is "south wall of Greenwich Park, on the west end, Curtis." Probably this is also the latest recorded account of the locality of this rare *Sedum*. It may be said that the locality is not genuine (wild), for there it may have been planted. True; but it may have been planted on the rotten walls of "Old Sarum," and on other walls, as well as that of Greenwich Park, where it has been unchallenged.

Veronica peregrina is reported from the Channel Islands; the second reported locality in the British dominions. It was first found in Ireland by the Rev. W. M. Hind, who kindly communicated his discovery to the 'Phytologist.' It is to be wished that Mr. Wolsey and the other discoverers of rare plants would imitate his example!

Juncus pelocarpus, by some united to *J. lamprocarpus* as a variety, has been reported from the Tyne province; also *Fumaria Vaillantii* from North Yorkshire.

The discoveries in the neighbourhood of Perth have been neither few nor unimportant. The only new plant reported is *Arenaria balearica*, a species confined to the shores of the Mediterranean. There is no evidence at present forthcoming to account for the plant's being produced on the top of a shed or garden tool-house. The only fact certainly known is that it

grew there for at least a few years,—the reporter did not learn how many, because there was no one there who knew. It must be accepted, like the *Aremonia agrimonioides*, which is not confined to a single spot in Scone Woods, but grows in various parts of the carse, though probably not in very great force. This latter plant, it will be seen from the Thirsk Report, has turned up in West Yorkshire.

But if the new plants from Perth be few, the new stations recorded for some of the rarest of our favourites are numerous.

In the first place, we have to congratulate Mr. Sim on the discovery of a new locality for *Linnaea borealis*. This is one of the most interesting facts which has ever been published in the 'Phytologist.'

Cheiranthus Cheiri, *Sedum album*, and *S. dasyphyllum* (they are here combined because mural plants) have been found by Mr. Sim growing on the living rock, not on the dead brick or stone wall only. Our correspondent who sent a long list of Cheshire plants, saw it (the Wallflower) growing on the rock on which Beeston Castle stands, or rather stood. But in this case it may probably be truly said that the seeds dropped from the wall upon the rock, and there they grow. Is there an old castle or the remains of an old wall on the top of the rock by the river Tay, where Mr. Sim finds the Wallflower in such abundance? If there be not, how did it get there? By currents? Does the flood in the river ever rise so high as that part of the rock where the plant grows? Might not the birds have conveyed the seed? These are foolish or at least unprofitable questions, because no satisfactory answer can be given to them. The two *Sedums* have rarely or ever been seen so far north as Scotland. They have both an extensive European range, especially *S. album*. Probably both might appear on natural stations in the South of England, if rocks were as common as brick walls and tile roofs. As it is, *S. album* occurs many times more frequently than *S. dasyphyllum*, which is one of the rarest of our rare plants.

Corydalis lutea is also recorded from a wall at Scone toll-bar. Last summer, while residing for a few days at Foot's Cray, in Kent, I saw this plant in several places spreading from the gardens, where it was planted, and creeping over the shingly path. I did not see any of it on walls here, but abundance in the cottage gardens, where it grows luxuriantly. Few plants have

neater foliage than this has. Has this plant been observed in Scotland before? Is it in Hooker's 'Flora Scotica'?

Potentilla tomentosum (?) (it looks more like Continental-grown specimens, so called, than like *P. recta*, which has been seen in the neighbourhood of London) has been already reported.

Doronicum Pardalianches and *D. plantagineum* have both been reported, from Moncrieff, as of spontaneous growth, or perfectly naturalized, *i.e.* wild. A definite locality has also been assigned for *Cynoglossum sylvaticum*, *Linaria repens*, *Helleborus fœtidus*, etc., all previously obscurely indicated as growing in that district.

The range of the following must now be enlarged, viz. *Stratiotes aloides* from 54° to 57°, consequently this is an addition to the Scottish Flora. Also *Helleborus fœtidus* from 55° to 57°. *Lonicera Xylosteum* from 51° to 57°, another addition to the Flora Scotica. *Cynoglossum sylvaticum* from 53° to 57°.

In a parcel of plants, for which the writer of this is indebted to the curator of the Thirsk Natural History Association, there was a specimen of *Anchusa officinalis*, collected not far from Newcastle. An account of the locality and of the circumstances under which this rare plant was found would be highly acceptable to our readers.

In the account of the Sydenham plants, *Sedum albescens* (*S. glaucum*, Sm.) should have been entered as found on the same part of the wall, and in juxtaposition with *Sedum sexangulare*, at Lower Sydenham.

The two British *Elatines* (*E. hexandra* and *E. Hydropiper*) were reported by the secretary of the Birmingham, or Worcestershire, Natural History Society. These plants had been observed several years ago, and were entered in the 'Phytologist,' in an article called the "Flora of the Clent Hills."

Hesperis matronalis is another of Mr. Sim's discoveries near Perth.

This, it will be admitted, is a very respectable catalogue of novelties and discoveries for one year.

A suggestion, made by one of our reverend contributors, to the effect that a list of the names and addresses of botanists in all parts of the kingdom would be very convenient both for corresponding and *tour-going* members of the fraternity, has been

long under consideration. The hint is so good and practicable that it did not require much consideration, but there was not a favourable opportunity of laying it before our readers till now.

The intention of this notice is to urge all our correspondents to send us their names and places of abode for publication in the 'Phytologist.' It is further requested that, as there are many readers of our Journal who are not contributors, our friends will be so obliging as to supply us with the names, etc., of other botanists who are willing to aid their brethren, and who would not object to having their names published. We hope that many of these will consent that their names may be sent for publication. It is desirable to print and circulate a list as complete as possible of the name and address of every botanist in the United Kingdom, or in any of the colonies and dependencies of the same.

The object or design of this list is sufficiently obvious; but lest there should be any misapprehension on this head, let it be observed that the list is intended solely for the purpose of helping those who are more or less engaged in the study of plants, or who take pleasure in such pursuits. It is not brought forward either to increase the circulation of the 'Phytologist,' nor to increase the number of its correspondents. This may ultimately be one of its beneficial results, but this is neither the primary nor the proximate motive for bringing it forward.

Few botanists who have been sojourning for a few weeks, or only for a few days, in any particular locality, have not had occasion to regret that, at some time or other or in some place or other, they were not provided with such a list, especially on hearing when it was too late that there was a resident botanist in the place where they had just been, one who could have materially aided them in their researches.

This will in general be as gratifying to the resident or local or provincial botanist as it will be to the botanical tourist.

The interchange of knowledge and opinion, the relation of personal observations and incidental scientific conversation, will be mutually beneficial. The correspondence of naturalists is always highly interesting and edifying, but personal intercourse, blended with the amenities of science and literature, is still more desirable. Few are they who will not heartily respond to this invitation!

It ought to be understood that botanists who are unwilling, either from physical weakness or other infirmities, to associate with their brethren, should not send their names.

There are, indeed, many professional men who love the science, and who would render all possible aid to a stranger, but who are hindered by their necessary avocations from enjoying this pleasure. Almost all botanists, however, who can enjoy this expensive luxury of *tourification* on non-professional objects are professionals themselves, and therefore little or no inconvenience can arise on this score.

The benefit to science would be much, and the advantage to sociality, kind feeling, liberality, and enlargement of both mind and heart, would be more. We have known botanists travel thirty miles to procure a plant, to see it growing in its native place, to observe all the accidents and circumstances respecting it. It would be far more gratifying to go double the distance to see a fellow-student, who could probably lead us to the station of half-a-dozen rare plants, and, what is better, give us an opportunity of knowing and appreciating himself; teaching us by an example how much a man is better worth seeing than any plant, however rare and valuable it may be.

It is hereby requested that all botanists who are desirous of taking part in this new movement should forthwith transmit to the 'Phytologist' their names and address. Further, as the list will be but a scanty one if it embrace only our usual correspondents, it will be necessary that every one who takes an active part in this should get the names and address of as many as are desirous of aiding us in this undertaking.

The list of contributors issued with each volume of the 'Phytologist' does not answer our purpose. Many of our correspondents are anonymous; others give their names without their locality, and, what is a graver objection, we have no right to assume that they will all courteously receive strangers and help them in their botanical researches in these respective localities. It may be so, and we hope it is, and from our own experience we know it is; but we will not take the liberty of acting on our own experience and knowledge.

An assurance is required that the persons whose names are proposed to constitute our projected list are willing to afford all the assistance they can. Strangers must not be exactive. It is

an offer of pure goodwill, the spontaneous desire of mutual gratification. A resident botanist, if he cannot even point out the way to the inquirer, may be able to tell him who can, or may put him in the way of getting adequate information.

The list will be printed from time to time in our pages, viz., when a suitable number of names has been received. At the end of the year the lists might be combined and printed together. They might also be issued separately if judged expedient.

It is hoped that our readers understand the purport of the above remarks: if not, they may request further explanation.

In fine, our thanks are respectfully tendered to our numerous contributors and supporters "for past favours," and hoping for a continuance of future attentions, as the circulars issued at this period express the wishes of the commercial community, we wish our constituents the customary congratulations of the season.

Chelsea, Jan. 1, 1860.

The Royal Society of Edinburgh and the Neill Medal.

At the opening meeting on 5th ult., for session 1859-60, of the Royal Society of Edinburgh, the Neill medal and prize was presented, through Professor Balfour, to W. Lauder Lindsay, M.D., F.L.S., for his 'Memoir on the Spermatogones and Pycnides of Filamentous, Fruticulose, and Foliaceous Lichens,' read to the Society during the last session. In addition to awarding this prize, the Society is expending a considerable sum in publishing the memoir in question in the forthcoming part of its 'Transactions' (vol. xxii.), and in engraving the relative illustrations, executed by the author, which consist of twelve plates of between 400 and 500 drawings.

The Neill prize was, by the late Dr. Patrick Neill of Canonmills, the eminent Botanist, placed in the hands of the Royal Society to be awarded for distinction in Natural History; and this year it was offered for "a paper of distinguished merit on a subject of Natural History, by a Scottish Naturalist, presented to the Society during three years preceding 1st February, 1859; and, failing such paper, for a work or publication by a distinguished Scottish Naturalist, bearing date within five years of the time of award." In awarding all its prizes, the Society is prepared

to do the most ample justice to the merits of the papers sent in, by availing itself of the assistance of the most eminent authorities in every department of Natural History, both at home and abroad, who are called upon to examine and decide. The Medal now awarded contains, on one side, a profile of its founder, and on the obverse side the inscription, "Adjudged for eminence in Natural History to Wm. Lauder Lindsay, M.D., by the Royal Society of Edinburgh." Lord Neaves, one of the vice-presidents of the Society, in the course of his long and able inaugural address, remarked, in regard to the Neill Prize: "The Neill medal and prize, founded by our late member, Dr. Patrick Neill, for the encouragement of the Natural History studies, in which he took a life-long interest, has been awarded by the Council to Dr. Lauder Lindsay, a Scotchman, but not a Fellow of this Society, for a paper on the Lichens, showing immense labour and research. This paper has been submitted to competent Botanists, for their opinion, and the Council have pleasure in stating that it has received their high approbation. It will, therefore, not merely be rewarded by the Neill medal and prize, but it is in the course of being printed at length in the 'Transactions,' and of being illustrated by numerous plates, beautifully executed by the well-known artist, Mr. Tuffen West, of London. The delay which Fellows of the Society have experienced in receiving their Fasciculus of Transactions, arises from the wish of the Council to include in it this important contribution, which will very soon be completed."

OBSERVATIONS ON THE FORMS OF SOME BELGICO-BRITISH PLANTS.

From M. Crepin's 'Plantes rares ou critiques de la Belgique.'

BARBAREA INTERMEDIA and B. PRÆCOX.

"J'insisterai toutefois sur la différence de saveur qui existe entre le *B. intermedia* et le *B. præcox*: le premier est d'une abominable amertume, tandis que le second n'a point de goût désagréable, et de plus est mangé en salade. Si les phytographes avaient plus fréquemment insisté sur cette différence de saveur, nul doute que la confusion du *B. intermedia* avec le *B. præcox* n'eût été ni si prolongée ni si générale."

Taste, like colour and smell, is oftener a distinctive character of a race or a variety than of a species. How many species of *Pyrus*, *Fragaria*, *Prunus*, etc., would be distinguished by the taste? The same question might be asked about the cultivated Crucifers, *Brassica oleracea*, etc. How many myriads of species of Roses, Dahlias, Pansies, etc., might be distinguished by colour, and how many species of Mints, Calamints, etc., by smell? It may be true that these two forms of *Barbarea* are distinct species, and that they are recognizable by their taste, just as some species of Fungi are distinguishable by their colour; but such distinguishing characteristics are not usual.

Note. M. Crepin observes that *Barbarea præcox*, R. Brown, is *B. patula*, Gren. et Godr.; and that the veritable *B. præcox* is a Belgian plant. Possibly it may be here also, although we are not so sharp-sighted as Belgian botanists. M. Crepin would much oblige us by sending us seeds of the genuine *B. præcox*, i. e. the Belgian form.

PRUNELLA (BRUNELLA) ALBA and P. VULGARIS.

The author of the 'Notes on some Rare or Critical Plants of Belgium' is surprised that this species, *P. alba*, is combined with *P. vulgaris* as a variety of the latter. He distinguishes them thus:—

P. alba.

Seed oblong, when ripe not easily detached from the disk.

P. vulgaris.

Seed obovate, easily detached from the disk.

The author maintains that there are other constant differences between these two forms or species, viz. in the form of the calyx, in the size and shape of the lower teeth, in the colour of the corolla (blanc jaunâtre dans le *B. alba*; violette purpurine ou blanche dans le *B. vulgaris*), and perhaps, he adds, in the form of the casque or upper lip of the corolla. Also the plants differ in pilosity, in the forms of their leaves and in the stems of *P. vulgaris* rooting at the base, while the stem of *P. alba* has no such tendency. Will any reader verify these characters, and tell the writer what may be his opinion of their feasibility?

POTAMOGETON OBLONGUS and P. NATANS.

P. oblongus.

Nerves of the fresh leaves *obscure*.

P. natans.

Nerves of the fresh leaves *transparent*.

In a note to the above characters, which M. Crepin calls constant, he adds, "In 1856 I collected in deep water, between Bande and Champlon (Luxembourg), *P. oblongus*, with leaves one-third part larger than those of *P. natans*; and notwithstanding the extraordinary development of the stem and leaves in these plants, the fruit and spikes were as small as usual in this species. This fact does not corroborate the opinion of some botanists that *P. oblongus* is only a minor form of *P. natans*." SIGMA.

BOTANICAL RAMBLES IN JUNE, 1859.

By JOHN SIM, A.B.S.ED.

RAMBLE IV.—*Banks of the Tay and Almond.*

In the latter end of June, 1859, I set out in search of *Valeriana pyrenaica*, *Vicia sylvatica*, and *Erigeron alpinum*. The first I found, the other two I found not.

Erigeron alpinum is stated, p. 242 of Hooker's 'Flora Scotica,' to grow near the Bridge of Almond, and *Vicia sylvatica* about the same locality was found by my friend Dr. Lindsay a few years ago. I have a specimen of it, gathered some years since by a Scone gardener at the same station, but though I searched long I could not find it. On this occasion I walked from the Bridge of Perth, along the margin of the Tay, until its junction with the Almond two miles above Perth, and then ascended the left bank of the latter for about a mile. In this day's walk I observed the following plants:—*Hieracium prenanthoides*, border of a field, in a dry ditch, not yet in flower; *Galium boreale*, right bank of the Tay, in abundance, just coming into flower; *Avena pratensis* and *Festuca pratensis*, also plentiful; *Scirpus sylvaticus* not yet fully developed. Near the junction of the two rivers are two woody islets, containing about two and three acres respectively; in them are found the following rather rare plants:—*Geranium sanguineum*, *Cnicus heterophyllus*, *Doronicum Pardalianches*, *Stellaria nemorum*, *Lychnis diurna*, *Hieracium prenanthoides*, *Armeria maritima*, *Silene maritima*, *Solidago Virgaurea*, *Primula veris*, and *Thalictrum minus*.

I pursued my way northward, to the place where the two rivers meet, and crossed the Almond dry-shod; this river, owing

to the long continued drought, was almost dried up. I entered a plantation on the north bank and found two vigorous plants of *Valeriana pyrenaica*, but greatly mortified at finding the blossoms plucked off, most probably by children who herd cattle on the opposite bank. I ascended the river still further, expecting to find, above the Bridge, *Vicia sylvatica* and *Erigeron alpinum*, but found neither. I discovered plants of *Astragalus glycyphyllus* in abundance and luxuriance, and collected a case full.

On high earthy banks, about a mile above the junction of the Almond and Tay, I gathered one or two specimens of *Verbascum Thapsus*, by no means a common plant; it was large and vigorous, six feet high. I observed plants of *Chenopodium Bonus-Henricus*, *Anthyllis Vulneraria*, *Agrimonia Eupatoria*, and *Tragopogon pratensis*; the latter is also plentiful about a mile and a half above Perth, along the banks of the Tay. The former is mostly confined to the banks of the Almond. Of other plants I saw none rare or uncommon that day.

RAMBLE V.—Bog of Methven.

This Bog is the only known station in Scotland for the singular rush-like plant *Scheuchzeria palustris*. It is also interesting to the Botanist otherwise, as containing a few other rarities, such as *Carex limosa* and *Cicuta virosa*. I visited this Bog last summer (1858), and procured a good supply of the *Scheuchzeria*.

In June, this summer (1859), I went to it in order to get specimens of *Carex limosa*, of which I obtained a great number. *Cicuta virosa* appeared more plentiful this year than the last, but only just coming into flower, consequently unfit for the Herbarium of the practical Botanist. *Carex vesicaria* or *C. ampullacea* (I am not very well acquainted with the *Carices*, and these two species being closely allied, I cannot decide with certainty which of the two) covers nearly the half of the Bog, to the entire exclusion of almost every other plant; the other half is mostly overrun with the delicate trailing stems of *Vaccinium Oxycoccus*. I visited the Bog, July, 1859, and the berries of this humble plant were in hundreds of thousands, but not quite ready. I have a specimen of *Stratiotes aloides* from another bog about a quarter of a mile distant from the one in question, but as I have not seen it I can only believe in its existence, but hope to see it soon and to gather a supply of the *Stratiotes* for myself. The *Scheuchzeria* is plentiful, and is in no danger of eradication.

When at the Bog, in June last, I visited the station where grows the rare *Turritis glabra*. I could only observe two plants; I gathered one, leaving the other to seed. I then made for the Railway Station, near to which, on the roadside, I procured a few specimens of *Cerastium arvense* and *Erodium cicutarium*. I afterwards got into the railway carriage, and in a quarter of an hour was in Perth city.

I had another walk to the top of Craigie Hill, and discovered, in the corner of a plantation, several plants of *Sanicula Europæa*, the first I have seen in this neighbourhood; and near Craigie village, under a hedge, two plants of *Cnicus Eriophorus*; one had been in flower but destroyed, the other only had leaves. I saw another plant of it near Barn hill, but being also on the roadside, it will likely share the fate of its Craigie relative.

Bridge End, Perth.

HUDDERSFIELD PLANTS.

The following notes have been just received from Mr. C. C. Hobkirk, the author of the 'History, Antiquities, etc., of Huddersfield,' being remarks and explanations about the botany of the district:—

“With respect to the *aliens*, I fear we shall lose many of them, as the shoddy has been spread over the fields, and whether the plants will be able to grow under this change remains to be seen. Your assumption of the area of the district in question is about twice its actual dimensions—thirty miles will be its extent—and further, the whole district lies between 300 and 900 feet above the sea-level, and the geological character of the soil is wholly shale and sandstone, without any of the mountain limestone.”

We supposed the dimensions of this district round Huddersfield to be about sixty-four square miles, which would be only a distance of four miles from the town on all sides. Knowing that the space between Huddersfield and the places where the plants are said to grow, viz. from six to eight miles, the diameter of the surface of the surrounding district must be at least twelve or sixteen miles, and therefore the area will be double of our estimate. If the superficial extent be only thirty square

miles, the plants enumerated should all be found within a line or imaginary ring which is less than three miles distant from the town. Three miles radius will be a diameter of six miles, and, according to Cocker, the area will be $6 \times 6 \times \cdot 7954$, or about twenty-eight square miles. But the distance to the localities of many of the plants is at least double or triple three miles, and therefore the area must be considerably above sixty square miles. Longwood is called an easy walk. Longwood Edge is still further. Three miles is not what a young man would call an easy walk. "A stretch of four miles brings us back to Huddersfield." An equal distance in the other or opposite direction will give a diameter of eight to ten miles, and an area of between sixty and seventy square miles.

Is Elland, famed for the urbanity of its male and female population, only four miles from the market-cross, or even from the modern boundaries of the present town? Is Kirklees only four miles from the town? Are the moors where Hurtberries and Cowberries grow only four miles off?

We are informed that the following plants do not grow there, and we take the author's word for this, because he surely knows more about what grows there than we do:—

"*Malva sylvestris* has not yet been found in the neighbourhood of Huddersfield, so far as I am aware; neither have *Geranium sylvaticum*, *G. pratense*, and *G. pusillum*. There is not a single plant of *Lythrum Salicaria* on the banks of our streams; its place seems to be usurped by *Valeriana officinalis*. *Hieracium vulgatum* and *Carduus lanceolatus* should be inserted. *Centaurea nigra* has been shown me in a dried state, but the authority is not reliable. *Aira præcox* you will find on reference to page 130. I have not yet heard of *Equisetum Telmateia* being found.

"In addition to the list I can now include—*Draba verna* and *D. incana*, found by Mr. William Guthrie, at Ainley; *Hypericum Androsæmum*, *Myriophyllum verticillatum*, and *Salix viminalis*.

"C. C. HOBKIRK."

After all the explanations given as above, and the additions made, we do not think the Huddersfield Flora a rich one. Our comparison is with the South of England, where there is a greater number of species than in the middle or the north of England.

But, from personal experience of the results of botanizing, we

anticipate that considerable additions remain to be made to the Flora of Huddersfield.

When Mr. Hobkirk prepares a second edition of his work, he is recommended to enter the distances of the respective localities from the town. A small map of the district would be a useful addition.

CHAPTERS ON BRITISH BOTANY.

CHAPTER IV.—THEOPHRASTUS AND THE EARLY BOTANISTS OF GREECE.

Rhizotomi (rhizotomists), Root-diggers or Herbalists : superstitious practices of : some of them noticed by Theophrastus and Athenæus.—Theophrastus : his life, by Diogenes : his History of Plants.

There were heroes before the Atridæ led the armies of Greece against Troy. *Fortes vixere ante Agamemnona.*

There were botanists before Theophrastus. Greek botanists are quoted in his 'History of Plants.' He has preserved the memorial of these early plant-seekers and root-diggers, even to these our days. But if Theophrastus be not the first botanist, he is the earliest writer on the subject whose works are extant.

To Greece is usually attributed the honour of being the instructress of Europe in learning, science, and art. Whence the Greeks obtained their knowledge we do not precisely know, probably from Egypt and the East, certainly not from the West. That they were the instructors of the Romans we also know; and the latter became not only the masters, but the teachers of the world.

It may be said, truly enough, that Britain did not get the knowledge of plants from Greece. Very likely the ancient Britons knew as much Botany before the Romans invaded and subjugated the aboriginal inhabitants of these Isles, as they did subsequently to the Roman invasion. But it should not be forgotten that our acquaintance with the acquisitions of our forefathers in botany and in all other branches of learning, is derived solely from the writers of Rome and Greece. On the botany of the Druids, Pliny is almost our only authority. The subject is only incidentally noticed in the histories of Cæsar and Tacitus.

Pliny's knowledge was collected from the Grecian authors

chiefly, and from the works of such of his countrymen as had, prior to his era, devoted some attention to the subject. The only work on botany exclusively, now extant, to which Pliny refers, is the 'History of Plants, by Theophrastus.' Therefore, we look for the origin of our botany and our botanical literature in Greece. Pliny is not the oldest extant authority.

There were botanists before Theophrastus, as there were poets anterior to Homer, dramatists before Æschylus, historians before Herodotus, but the sole memorials of these early students of plants are to be found in the works of the father of the science, Theophrastus. The work of this eminent Grecian philosopher is the earliest to which reference can be made.

The rhizotomists, as the early Greek herbalists were called, had their name from their calling. They were root-diggers, as the word implies; and like their brethren of a later date, in our own country, they were generally both ignorant and superstitious. They attributed magical virtues to roots and herbs, and practised various superstitious usages when they cut and collected them. Some plants were to be gathered by night, some by day, some with the body anointed, some while fasting, others after eating garlic and drinking strong wine. Like the disciples of our ancient Druids, the neophytes were instructed to describe a circle, with the knife or digging implement, thrice round the plant to be moved (three was a mystical number both among the ancient Greeks and ancient Gauls or Celts); sometimes to dance round it and talk obscenity (*περιαφροδισιων*); also to look towards the sun; or to turn their faces to the wind. Many more absurd and ridiculous practices of the early herbalists are recorded.

Although the reputation of these primitive collectors was calculated to throw general discredit on the whole order of botanists, some of the rhizotomists left behind them works which were thought worthy of being quoted both by Theophrastus and Atheneus,—for example, Tharyas, who was a notable pharmacopolist, and knew the nature and properties of herbs, and gave rules whereby the salutary might be known from the noxious plants (see Theoph. ix. 18).

Aristophilus gave directions for detecting plants possessed of aphrodisiac virtues or qualities. These properties have attracted the notice of all herbalists both ancient and modern.

The above-named rhizotomists (herbalists), together with Me-

nestor, Hippon, Leophanes, Diogenes, etc., lived prior to Theophrastus.

Theophrastus was, says Sprengel, the most celebrated of all the ancient botanists, and truly deserves the title of the Father of botanical science. He is called Eresius, from a town or place in the island of Lesbos, where he was born, 370 years before our era. His father was a fuller, named Melantha, and his own name was originally Tyrtamus, which was changed by Aristotle to Theophrastus, because, as Pliny says, he was very eloquent (a divine speaker), from which most excellent quality he obtained his divine name.

His teachers are said by Diogenes (not the Cynic, but another divine-born son of the muses, viz. Diogenes Laertius, who wrote the lives of the philosophers) to have been first Leucippus, one of his own citizens, next the divine Plato, and last the famous Aristotle.

When Aristotle retired from the Peripatetic school, his pupil and friend, Theophrastus, was chosen to be his successor. So great was the reputation of this celebrated school, while under his charge, that it was attended by two thousand students. His fame was not only spread over all Greece, but it extended to Egypt, then a Grecian kingdom, and he was invited by Ptolemy, the son of Lagos, to Alexandria. He attained to great longevity, having lived more than one hundred years. This is inferred from a sentence in his work, entitled 'CHARACTERS,' although Diogenes states positively that he died in his eighty-fifth year. But whether he lived upwards of eighty years or upwards of a hundred, he lived for the benefit of his contemporaries, for the instruction of future generations, and for an honour to humanity.

He was not, however, contented with the space of time allotted to him by nature, for he blamed her because she had given a long life to crows and stags, although to them it was of no great use, and denied it to men; adding, *ἡμεῖς, ὅπου ἀρχομεθα ζην, τοτ' ἀποθνεσκομεν* (but we no sooner begin to live than we die). Cicero, in his 'Tusculan Disquisitions' (Quæstiones) takes up the same complaint against nature, justly affirming that if a longer life was granted to eminent men, they would make more progress in knowledge, wisdom, and virtue.

He was so much beloved by his citizens (Athenians) that he was honoured with a public funeral. The Athenians followed

his remains to the tomb. His eloquence has been already alluded to. He was a great lover of his country, and twice freed the state from tyranny. He was most affectionate, prudent, and most laborious.

It is reported of him that in his orations and lections he carefully studied and practised every position and gesture of body and countenance, employed every motion and modulation of tone, in order that he might enforce his arguments or render his oratory more persuasive and efficient.

After his decease, he bequeathed his garden, and all the surrounding buildings, to the citizens of Athens for ever, and appointed ten men as trustees, and whose names are preserved in Diogenes. These were to take care that this his intention should be strictly carried into effect.

His works were very numerous; Diogenes preserves the names of 227. Of all these the only books remaining are the nine books, and a fragment of the tenth, of the 'History of Plants;' and six books *De Causis Plantarum*. With the exception of the 'CHARACTERS,' all the rest of the works of this philosopher and naturalist are to be reckoned *in operibus perditis*—"lost labours"—books no longer extant.

Sprengel, whose remarks form the groundwork of the above, further writes; in reference to this earliest 'History of Plants:' "Theophrastus, in the description of plants enumerated by him, does not treat of them in that systematic order of arrangement and description practised in our times. He follows no method, except it be the juxtaposition of plants which agree in economical uses, native country, locality and habit. Aquatic plants, parasitical plants, pot-herbs, trees, cereals, vegetables wild and cultivated, are treated in separate sections, or in distinct chapters. His work abounds in repetitions, the same object being frequently repeated, although new characters and uses may be ascribed to it." Thus far Sprengel.

The following is a brief analysis of the contents of this most ancient treatise on plants, from the Oxford edition of Stackhouse, the most convenient within reach.

Theophrastus divides or classifies all vegetation into three divisions,—trees, shrubs, and herbaceous plants; and in this he is followed by almost all botanists down to the seventeenth century. The father of English botany, the illustrious Ray, adopted the same classification in his *Synopsis* of the British Flora.

A subject which has caused much controversy in modern times, viz. the transmutation of species, was not unnoticed by the earliest botanists. Theophrastus devotes much labour to the question about the degeneration of trees and herbs,—of the change of one species into another, as, for example, of *Sisymbrium* into Mint,—of wheat into rye, *πυρος εις αιραν*. These changes are alleged, not on his own authority, or as the result of his experience, but as hear-says, and he is in the habit of qualifying his statements with the hypothetic phrase *ειπερ γινεται*, *if it be so*. Barley, he says, will be converted into wheat during the process of growth, if only stripped of its integument or husk, *πιτισθεισθαι*.

He complains that there were peas in his time that never could be “boiled soft,” unless they were steeped the previous night in an alkaline solution; *βρεξαντα χελευουσιν εν νιτρω νυκτι*.

Annual and perennial plants are distinguished, and also the difference between herbaceous and half-shrubby kinds.

External form is often well-defined in the ‘History of Plants;’ for example, the various characters of roots, as the fleshy, the tuberous, the fibrous, the woody, the creeping, etc.; also the habit of stems, the situation of branches, the forms of leaves, fruits and seeds, evergreen and deciduous trees and shrubs. He describes the winged or compound leaf as *πτερυγα*, a term equivalent to Linnæus’s term *pinnatum*.

Besides the number and position of the external organs, he knew and described the internal structure, viz. the cells, tissues, and sap.

The economical uses, and the mode of cultivating the useful plants, occupy a large portion of his work. In his time, the vine, the olive, the fig, the apple, and the pear, were the most important fruits of Greece. In addition to these, he describes many other fruit-trees which were not the natural produce of his country, viz. the pomegranate, plum, peach, etc.

Like Pliny, he gives lists of plants useful for garlands; among these he assigns the first rank to the rose, the lily, the narcissus, the crocus, cenanthe (not our umbelliferous cenanthe). Among fragrant flowers, the violet and the phlox (pink?) occupy the chief place.

In treating of the duration of leaves, or of the deciduous and

evergreen leaf, we are told that in the island of Elephantina the vine and fig-tree are evergreen. Possibly this phenomenon may be observable in some mild winters in the south of Europe, even in deciduous trees.

Many of our current technicalities are used in the 'History of Plants;' for example, in fruits, *monocarps*, *polycarps*, *pericarps*, *angiosperms*, *gymnosperms*, etc.

He appears to have distinguished between monocotyledonous and dicotyledonous plants, and gives examples of both. Genera are also well distinguished, and species, but the latter rather more obscurely than the former.

His great object appears to have been to give his countrymen a popular history of their cultivated and useful plants; for although he makes a distinction between *wild* and reclaimed species, yet both were equally useful.

The cultivated trees producing food, the wild timber; the garden vegetables were for the table, the wild for fodder and pasture. There is also much information about the means of extracting gums, resins, and oils from plants; also on their alexipharmic (antidotal) and magical properties. Pliny's great work is stuffed with this learning, as we shall see when the Roman knowledge of botany is under consideration. These properties have been handed down almost to our own times. In these early days now under notice, the properties of hot and cold in the first, second, and third degree, had not been discovered.

Much of what this history contains was adopted from the popular or vulgar opinions, prejudices, and superstitions; and that the author did not give implicit credence to all that he heard appears from his frequent use of *φασι*, "it is said," or "the Arcadians say."

What he describes from his own observation or from that of others, is reliable; his notice of the Banyan fig-tree, which had not been long known in these times, is well and graphically given by our author. It is not likely that this tree was known in Greece prior to Alexander the Great's invasion of India.

There will be occasion for entering into this subject with greater fulness when the specific identity of the plants of Greece and Britain is before us. This will be the subject of the next chapter.

Review.

Enumeratio Plantarum Zeylanicæ. An Enumeration of Ceylon Plants. By G. H. K. THWAITES, F. L. S., Director of the Royal Botanic Garden, Peradenia, Ceylon. London: William Pamplin.

The following account of this interesting island is from the 'Colombo Overland Observer':—

“The area of Ceylon being about 25,000 square miles, the population to the square mile is about seventy for the whole island. But the proportion varies exceedingly, according to the nature of the soil and the climate. In the Western Province, with its fertile soil, its fine climate and its commercial advantages (more than four-fifths of the commerce of the Island being conducted at the Port of Colombo), we have, in an area less than one-sixth of the Island, nearly one-third of its population: the rate to the square mile being about 148. The Eastern Province, on the other hand, although it boasts of the magnificent harbour of Trincomalee, the rich rice-fields of Batticaloa, and fine forests of timber, does not contain 16 inhabitants to the square mile. The Western Province is 3,820 miles in extent, and contains more than 560,000 inhabitants; while the Eastern Province, with its ruined tanks and feverish wastes, has only 74,000 inhabitants to an area of 4,753 miles. The Northern Province, the largest in the Island, contains a larger proportion of depopulated wastes than even the Eastern. Where once the great city of Anooradhapoorā stood, and where Dootoogamino reigned over a teeming population, fever and silence now brood over the ruins of former opulence. The mainland portion of the Northern Province is still more scantily peopled even than the Eastern; but the character of the whole Province is redeemed by the beautiful little Peninsula at its northern end, conquered from the sea by the coral insects, covered in many parts with rich red soil, and peopled at a rate rising from 70 to the square mile at the end where the European planters are cultivating Cocoa-nuts, to 1,000 where the Tamils, by the aid of a hot sun and ceaseless irrigation, raise teeming crops of Grain, Tobacco, Chillies, Onions, Yams, Plantains, and Oranges. The extent of the Northern Province is no less than 5,427 miles, the population 299,795, of whom probably five-sixths are concentrated on the small peninsula and islets which face the extreme southern point of Continental India. The rate of population to the square mile is about 55. Next to the Northern, the Central Province is the largest, and, in view of the fact that it is the scene where the great Coffee-growing pursuit has been chiefly developed, it may perhaps be regarded as the most important. Unfitted for the growth of the Cocoa-nut,

which supplies the wants of so large a portion of the inhabitants of the Maritime provinces; and the scene, up to a recent period, of desolating wars and still of practices which check population; the vast area of the Central Province, 5,191 miles, embraces a population of only 244,904, the proportion to the square mile being under 50. The greater portion of what is called the Mountain Zone is within the limits of this Province, but the hilly region, which is exclusively the scene of European coffee plantations, runs into the Western and North-Western Provinces. Over this region are scattered some 100,000 Tamil labourers from Southern India, who do not enter into the returns we are analyzing. In the Hill country the Kandian Rice terraces are interspersed with the European Coffee estates,—Coffee generally commencing at the altitude where Rice cultivation ends. But a large portion of the Central Province, where it marches with the Eastern and Southern, is not hilly, but flat and waste and feverish, the rivers, which once fed the Sea of Prakrama, being now allowed to ‘wander at their own sweet will’ through scenes whose beauty cannot be surpassed. Alas that it should be the beauty on which men cannot look and live! We do not doubt that health and life will be yet restored to scenes which at present are as fatal as they are fair; but the work is not to be done in our day. Of the 600 Europeans now engaged in the cultivation of Coffee in Ceylon, about three-fourths reside in the Central Province. The North-Western Province is one recently erected by annexations from the Western and Central, which, with advancing commerce and business, were becoming too unwieldy. The seat of its Agent has been moved from Putlam, the principal town of the Maritime and Salt Districts, to Kornegalle, the capital of the Seven Korles and the centre of a considerable Coffee cultivation on the part of Europeans, and Rice cultivation on the part of the Natives. Cocoa-nut cultivation, by Europeans and Natives, is continued from the Western Province along the shores of the sea and backwaters of this Province. The Salt manufacture here is of much importance; and a canal, which is now in good order, is the medium by which thousands of cwts. of this condiment are carried to the Western Province. The extent of the North-Western Province is 2,362 miles, the population 190,000: showing a proportion of about 57 inhabitants to the square mile. The Southern is the smallest but not the least important of the six Provinces into which the Island of Ceylon is divided. It contains Dondra Head, the extreme southern point of India, and its chief Port is Point de Galle, well known to all travellers by the Overland route as the great central port of call for steamers. Language of the most glowing and poetical description has been used to describe the rich Oriental scenery and the beautiful vegetation which here bursts on the view of ‘Overland’ passengers from England,—scenery and vegetation rendered still more attractive by a lively recollection of the hot, sterile lava-rocks of Aden. The

view includes Adam's Peak, the mountain sacred to Hindoos, Buddhists and Mahomedans alike. Adam's Peak is really a mountain, and is conspicuous to navigators from its form and position; but it is not the highest mountain in Ceylon, though geographers say it is. Its summit is 7,420 feet above the level of the sea. The mountain plain of Newera Ellia, the Sanatorium of Ceylon—

“Where Europe amid Asia smiles,”—

is only 1,210 feet lower, and over it tower three mountain-masses, which are all higher than Adam's Peak, viz. Pedrotallagalla, which is 8,280 feet above the level of the sea, and which therefore overtops Adam's Peak by 860 feet; Kirigalpota is 7,810 feet high, and Totapala 7,720. Adam's Peak therefore, though the most conspicuous, is not the highest mountain in Ceylon.

“By far the larger portion of the population of Ceylon are engaged in agriculture. But as yet they grow only two-thirds of the Rice consumed in the Colony. Those engaged in manufactures are chiefly arrack distillers, oil-makers who use the native bullock chekko, weavers, potters, carpenters, masons, etc. A goodly number of the people now find employment in connection with the European establishments for the preparation of Coffee and the manufacture of Oil. Cask-making has largely developed with the increase in the exports of Coffee, until now there seems some danger of the available timber being exhausted. The larger portion of the timber used in Colombo is obtained in the forests of the Eastern Province, chiefly in the neighbourhood of Batticaloa. For the railway, timber is to be imported from Western Australia.”

We have taken a longer extract than usual, because the subject is of unusual importance. This beautiful Island presents the most attractive features to intending emigrants, as well as the most promising field for the investment of capital. Ceylon produces the most valuable commercial commodities, which have been celebrated ever since the treasures of the East were accessible to European enterprise.

History of Singhalese Botany.

“Nearly two hundred years ago (1670) D. Paul Hermann came to Ceylon at the expense of the Dutch East India Company, for the purpose of describing all the plants and spices growing in the Island, and remained here about seven years.

“During this period he made drawings of, and collected and preserved a considerable number of Ceylon plants. He learned to read and write Singhalese, and we are not surprised to find that then the Singhalese names he received with facility were generally correct.

“He sent to Holland yearly collections of seeds and roots of the most rare plants, and besides the famous collection of dried plants which formed the materials of the ‘*Flora Zeylanica*’ of Linnæus, he sent home or gave duplicates to his friend John Commelyn and others.

“Whilst here he was assisted in describing the chemical and medical properties of plants by Grim, who also wrote a work on the plants and minerals of Ceylon.

“The collection kept for Hermann’s own use consists of five large folio volumes. The first three contain Ceylon plants only; the fourth contains Ceylon and Cape plants intermixed; and the fifth contains the drawings.

“Hermann returned to Holland in 1769, and between this year and the time of his death* in 1695, he wrote and published several illustrated books on Botany, most of the plates of which were reduced copies of those in the fifth volume above referred to.

“He left an unfinished catalogue of the Ceylon plants, called the ‘*Musæum Zeylanicum*,’ which was published at Leyden in 1717, and again in 1726; the first edition having been edited by William Sherard, of Eltham.

“John Hartog was next sent to Ceylon by Sherard, to collect plants. He sent a collection of seeds to the Botanic Gardens at Amsterdam, and a collection of Ceylon plants to Vossius, which, together with those given by Hermann to Commelyn, if not even Hermann’s own collection, came into the possession of Dr. John Burmann, who paid much attention to their description, and who in 1737 published the ‘*Thesaurus Zeylanicus*,’ a quarto volume illustrated by 110 generally well-executed plates. This work contains the descriptions, in Latin, of all the scattered Ceylon herbaria referred to above.

“The ‘*Musæum Zeylanicum*,’ which was written to agree with the chaotic arrangement of Hermann’s Herbarium, is embodied in Burmann’s work.

“Burmann is said to have been assisted in this work by Linnæus, who was then a very young man.

“The plants of Burmann’s work are arranged alphabetically, the botanic, barbarous, and native names being all mixed together. It contains a great mass of useful information, but even for that period cannot be called a scientific work. Ten years afterwards (1747) appeared the ‘*Flora Zeylanica*’ of the immortal Linnæus.

“Some authorities state that Hermann’s own collection of dried plants

* Hermann was born at Halle, and was employed by the Dutch East India Company as a physician in Batavia and the East. He probably returned in 1679, and became professor at Leyden, where he published, in 1687, a catalogue of the plants in the Botanic Garden of that famous University. In 1690 he published a *Flora of Leyden*. He died in 1695. The date in the text is probably a misprint for 1679.

formed the chief materials of Burmann's work, whilst, in the 'Flora Zeylanica,' Linnæus distinctly states that it disappeared after Hermann's death (1695) till chance threw it into the hands of M. Gunther (apothecary to the King of Denmark) more than fifty years afterwards (1745). Gunther sent it to Linnæus, requesting him to examine it, and affix the names to the plants throughout the collection.

"In more than one written life of Linnæus which we have read, and in which his works are enumerated, we do not recollect the 'Flora Zeylanica'* to have been included, though Linnæus tells us that he devoted a considerable portion of two years (1745-7) to the examination of those plants and to writing the 'Flora Zeylanica.'

"It was not many years prior to this that Linnæus published the sexual system of plants, and the classes and orders depending on it, and it is very likely that his 'Flora Zeylanica' was the first work on the particular botany† of a country arranged according to that system.

"Hermann's collection had been made seventy years before, and had been considerably knocked about, but by dipping the flowers into spirits, and by the use of a lens, Linnæus was able to classify the greater portion of this herbarium. It consists of about 600 plants, of which the true places in the system are assigned to more than 400; the rest he called *obscure* or *barbarous*.

"The examination of Hermann's herbarium not only enabled Linnæus to settle many doubtful species, but to form thirty new genera, which are given in an appendix to the 'Flora Zeylanica.' It contains four plates, and *indices* to the botanical, Malabar (Tamil), Singhalese, and official names.

"The system of attaching specific to the generic names of plants, which

* Extract from Linnæus's Diary, written by himself:—"Professor Hermann, of Leyden, who was sent in the last century by the Dutch to describe all the plants and spices that grew in Ceylon, happily returned hence, but did not complete the undertaking. After his death the herbarium was lost to the learned world, until at last it came into the hands of Gunther, the apothecary at Copenhagen, who, wishing to know the names of the dried specimens, sent to Holland, where he was informed that nobody was likely to discover the names but Linnæus, in Sweden; he therefore sent them to Upsala, when Linnæus discovered the collection to be Hermann's, and was rejoiced to be the person to save from destruction this treasure, which had hitherto been missing. He devoted himself day and night to examining the flowers, which, from the great length of time they had been dried, rendered his task almost Herculean; and he wrote his 'Flora Zeylanica,' which was now about to be printed.

† The 'Flora of Lapland' was published in 1737, ten years before 'Flora Zeylanica;' and the 'Hortus Cliffortianus,' the most splendid of all Linnæus's works, was published soon after. In both these works the sexual system is carried out. See Dr. Maton's work on the 'Life and Writings of Linnæus,' also 'Flora Lapponica,' 'Hort. Clif.,' etc.

Linnaeus is said to have borrowed from Rumphius, was not in vogue then; hence the plants of the 'Flora Zeylanica' have no specific names attached, but such were given in the first edition of Linnaeus's 'Species Plantarum.'

" 'Linnaeus authenticates the herbarium by showing that the numbers of the plants answer to Hermann's 'Musæum Zeylanicum.' On the death of Count Molcke, who became the possessor of this herbarium after Gunther, it was purchased by Sir Joseph Banks (for seventy-five guineas), and still forms part of his immense collection; the specimens are miserably damaged and mutilated, but many of them retain the Singhalese names annexed in Hermann's handwriting, and also generic names and synonyms in Linnaeus's. This herbarium, along with Sir Joseph Banks's other collections, is now in the British Museum.'

" It was consulted by Wight and Arnott for the elucidation of their Leguminosæ and Balsamineæ only.

" Mr. William Ferguson devoted a considerable portion of the summer of 1857 to a careful examination of the whole, making full notes on all the species, most of which, even the barbarous and obscure, he was able to recognize.

" Mr. Ferguson assures us that even now, after a lapse of nearly 200 years, most of the specimens are not only fit for botanical purposes, but that some of them retain the colour of their flowers and fruits; among other instances, the beautiful Pea-plant, so common in fences about Colombo, the Katarodu of the Singhalese (*Clitoria ternata*), and the Godamaranda (*Syzygium Zeylanicum*), so common in the Cinnamon Gardens, the former of which retains the *blue* colour of its flowers, and the latter the *white* colour of its fruits.

" The 'Flora Zeylanica' was the last work specially devoted to the botany of Ceylon in the eighteenth century.

" Thunberg travelled here in 1795, and from pp. 170 to 192 of the fourth volume of his 'Travels' we have the results of his researches in Ceylon. He paid some attention to our botany, but figured and described, in the Linnæan Society's Transactions, a species of *Dillenia* (*D. integra*) which really does not exist, and which therefore has puzzled all subsequent botanists. His plant was doubtless some form badly drawn of the Goda-Para of the Singhalese.

" We now come to the English period, but as on a former occasion we noticed at some length the labours of Moon, who was the only Englishman up to Mr. Thwaites's time who left a record of his labours behind him, we shall have very little to record.

" Mr. Kerr, who was sent here from China in 1815, at the recommendation of Sir Joseph Banks, was the first resident superintendent of our Botanical Gardens, but he died the following year, and left but little record of his labours. Moon, the author of the 'Catalogue of Ceylon Plants,'

the only work devoted to the botany of Ceylon in the English period, had charge of our botanic establishments from 1817 to 1826. We perceive that ample justice is being done to his memory by Mr. Thwaites. An interesting genus of Composite plants was named after Moon by Dr. Arnott. Andrew Walker was in charge of the Botanic Gardens in 1827. James MacRea, a Scotchman, was in charge for three years (1828 to 1829), and made and sent to England considerable collections of plants, especially our Labiatae and Grasses. Dr. Wight named a genus of Euphorbiaceous plants after MacRea, of which we have about nine species in Ceylon.

“ George Bird was in charge of the Gardens in 1831.

“ J. G. Watson, a pupil, we believe, of the celebrated Dr. Wallich, was in charge of the Gardens from 1833 to 1838. He lived fast, and died, and we believe there is no other record of his labours.

“ A Mr. Nightingale travelled here for the Duke of Northumberland about the same period, and made some collections of Ceylon plants.

“ J. G. Lear collected plants for Mr. Knight, the great London nurseryman, and acted as superintendent of the Peradenia Gardens in 1839. For the seeds of a beautiful species of *Convolvulus* sent home by Mr. Lear to Mr. Knight he received £20, and had the honour of knowing that the plant was named *Pharbitis Learii*. We believe that this beautiful creeper grew up amongst some seeds received by Mr. Lear from South America.

“ Mr. Normansel was superintendent from 1840 to 1843, and paid much attention to Coffee land, but has left no record of his botanical labours.

“ Mr. William Ondaatje, a medical sub-assistant, and also a pupil of Dr. Wallich, was acting superintendent in 1844. Mr. Ondaatje published some interesting papers on the botany of Ceylon in the Government Almanacs, and attempted to claim the first discovery of the Madder and Gum Kino plants in the Island, but both were given, with their stations, in ‘Moon’s Catalogue’ in 1824, and indeed we are assured that the *Rubia Zeylanica, sylvestris, Quadrifolia major* of Burmann’s ‘Thesaurus,’ is this very Madder plant.

“ Dr. Gardner was superintendent from 1845 to 1849. He brought great industry and science to the work, but died suddenly and prematurely without accomplishing much.

“ Dr. Wight was here in 1836, and travelled in Ceylon in company with Colonel Walker, the husband of the accomplished Mrs. Walker, who has done so much towards illustrating the botany of the Island by her beautiful and accurate drawings. On his return to Coimbatore, and with the object of writing a new edition of ‘Moon’s Catalogue,’ Dr. Wight took with him Moon’s collection of plants, and Dr. Gardener visited Dr. Wight with the object of comparing the collection with Dr. W.’s own rich herbarium. Dr. Gardener in this way did good service, and has recorded the

fact that in Moon's collection were to be found nearly all the species which subsequent Superintendents were able to discover in Ceylon.

"There is a gigantic forest-tree in the hilly district of the Island, bearing a large prickly fruit, and well known to our planting friends as the *Katubodder*, which, by a singular coincidence, was supposed by Moon to be the real Durian, *Durio zibethinus*, and is given as such in his 'Catalogue,' p. 56, but he gives the Singhalese characters for 'Katu-moda,' or *prickly fool*, instead of those for the kattu-bodda, the tree, which was no doubt meant; while the late Dr. Gardner described at full length, in the 'Calcutta Journal of Natural History,' the same tree as *Durio zeylanicus*.

"Dr. Wight, on the other hand, has pointed out Dr. Gardener's blunder in supposing the tree to be a species of *Durio*, and has figured and described it in his 'Icones,' tab. 1761-2, as the *Cullenia excelsa* (R.W.). He dedicated the genus in honour of Major-General Cullen, resident at the Court of the Rajah of Travancore, who has devoted a large share of his time to the study of economical botany.

"Dr. Wight, who is the greatest living Indian botanist, has done much towards illustrating and describing the botany of Ceylon in his 'Icones Plantarum,' 'Illustrations of Indian Botany,' and his other works.

"Besides the drawings of Ceylon plants made by Mrs. Walker, and sent to Dr. Wight and Sir W. J. Hooker, the Colonel made large collections of Ceylon plants, some of which are at Kew and Oxford.

"The late gallant and accomplished Lieutenant-Colonel Champion, who received his death-wound in nobly repelling an attack of the Russians at the Battle of Inkerman, paid considerable attention to the botany of Ceylon, and one of the best papers on the subject that we have read for years is one by him on the general and geographical distribution of the botany of the Island, and which appeared in the 'Ceylon Calendar for 1844.' In an article from the pen of his friend Sir W. J. Hooker we are informed that the lamented Champion had made notes of several new genera and species of Ceylon plants, which he intended publishing if his life had been prolonged.

"Mr. Thwaites, the accomplished author of the 'Enumeration of Ceylon Plants,' which has called forth our notice, was appointed superintendent of the Royal Botanic Gardens in 1849, and is now director of the same establishment.

"Those who are aware of the labour and almost insurmountable obstacles Mr. Thwaites had to contend with in writing such a work as the one under review, will readily admit that he must have worked like a Hercules for the nine years he has been in the Island.

"Mr. Thwaites brought with him the very best qualification for *scientific* botany, and that is, great command in the use of the microscope; for we know that in the examination of the Diatomaceæ, the very lowest class of

vegetables or animals, Mr. Thwaites established a European fame before he came to Ceylon. . . .

“Respecting the labour attending such a work as that of Mr. Thwaites, none, perhaps, but those who have paid considerable attention to botany can appreciate it. Were he to sit down and write all he found in books, or the names and information given by natives and others for the most common plants of Ceylon, he could certainly write a large book, and a book that to a great number of readers would doubtless be a very interesting one; but to separate the truth and the really useful information from the mass of contradictions and rubbish such a work would be sure to contain would be as difficult a task as that of ridding a dirty Coffee estate of the planters’ two great enemies, the Hullan-talla and the Spanish Needle, respectively known to botanists as the *Ageratum conyzoides* and the *Bidens Chinensis*, neither of which is admitted to be a native of Ceylon; or to get through a jungle composed of Rattans, Kudumirris-wæl, Maha, and Heen-Eraminyas, all of which are calculated to impress the traveller with the sentiment conveyed by the words ‘*Wait awhile.*’ To illustrate more fully our remarks, we refer our readers to the contradictory accounts of the mode of extracting toddy from the Palm-trees; some asserting that an *incision* is made into the tree, into the leaves, or into buds above the leaves, while very few describe the operation correctly.

“We have always advocated the importance of obtaining the native names of the plants, and have asserted that the majority of the Singhalese are, from necessity, as vegetarians, considerable herbalists, and well acquainted with the names of the mass of the common plants of their country; but we would guard our readers against the supposition that they will take the trouble to give correct names, unless they find out that the person asking for information can detect a gross deception, or discriminate the applicability of the names so given.

“While there are certain genera of plants, for every species of which the natives can give unvarying names, there are others containing ten to twenty species, for all of which they can only give one or two names. We shall instance the genus *Memecylon*, of which Mr. Thwaites, in his list of genera, gives thirty-three species, twenty of which will likely be found good ones; the Singhalese seem to know only *two* names, viz. *Welli-Kaha* and *Kora-Kaha*, and one or other of these they invariably give for at least ten species of this genus. In regard to their idea that there is a larger proportion of the flowering plants which never produce flowers, they are not less ignorant in this respect than a great number of our own countrymen. On one occasion we were collecting specimens of that interesting plant the *Hermandia Sonora*; it was loaded with *fruits*, and on asking an Englishman, who lived close by and who also assisted in procuring the specimens, if he could see and bring down some with *flowers* on, our botanical pipe was

put out by the following philosophical reply : 'That tree never bears no flowers, Sir.'

"Similar information from the natives is given in this style:—'Mal nay Mahatmeya,' or 'Nickan gas,' or 'Wal gas, mal mama dootova nay;' 'No flowers, Sir; useless or wild plants; I've not seen their flowers,' etc.

"We recollect seeing in the Ceylon Journal for 1833 an amusing letter from a writer adopting the signature of '*Bivalve*,' wherein he graphically described the mode in which he obtained the native names for plants he collected about Putlam. His informant was his Appoo, and on asking this functionary how he knew so readily the names of every plant, the botanist received the following grave reply : 'It's all the same to master, he writes every name in one book!'"

When the third Part appears, this interesting Island Flora will be again submitted to the readers of the '*Phytologist*,' and the economical plants will be compared with the '*Useful Plants of India*,' a very interesting book on Indian botany. This work will also be noticed as soon as there is room for a review equal to the importance of the work.

BOTANICAL NOTES, NOTICES, AND QUERIES.

WORMWOOD.

In Saltmarsh's '*Sparkles of Glory*,' chap. i., speaking of the knowledge of Solomon, he says, "Solomon's heart was large, like the sand on the seashore; and he was wise, from the Cedar in Lebanon to the Wormwood in the wall." Is the Wormwood here named the common Wormwood? And does it grow on walls? We often find the Hyssop named by writers in reference to Solomon's knowledge, and also the Moss, as growing on the wall, but Wormwood is new to me. S. B.

Communications have been received from

William Curnow; Rev. T. F. Ravenshaw; J. S. Mill; John Sim; H. C.; W. L. Lindsay, M.D.; Edwin Lees, F.L.S.; William Pamplin; T. F. R.; Sidney Beisly.

BOOKS RECEIVED FOR REVIEW.

Natural History Review, October, 1859.

Zusätze und Berichtigungen zu meiner Flora der Pfalz, von Dr. F. Schultz.

Commentationes Botanicae, auctoribus Schultz Bipontinis.

The Critic; four numbers. *The Friend*.

ADDITIONAL NOTES ON THE FLORA OF BELGIUM.

By H. C.

Our walks last summer having enabled me to add a few more rarities to my herbarium, I think the following list of them may not be uninteresting to the readers of the 'Phytologist,' especially those whom the facilities of steamboat and railroad travelling may tempt to visit the picturesque environs of Dinant. As before, I name my plants alphabetically.

Aconitum Lycoctonum. Valley of the Bocq, near the village of Bauche, in a wood on the right bank of the stream, leading towards Purnode.

Cotoneaster vulgaris. On the little ruin above the village of Houx, and in the adjoining wood.

Crepis biennis. One of our common meadow plants.

Gentiana cruciata. Fonds-des-Rivaux, between Houx and Dinant.

Helleborus viridis. On the bank of the Moulinet, near the ruins of Montaigle. M. Crepin says, "well established and apparently indigenous."

Hieracium Auricula. Persoon distinguishes *H. dubium* from *H. Auricula* by describing the former with "scapo subquadri-floro, *nudo*," while the latter has "scapo *unifolio*, subsex-floro;" but these do not seem to be constant characters, for in many of my specimens the leaflet on the scape is wanting, and few have more than four flowers. Plentiful in a meadow between Houx and Arvagne, and on the waste ground above the Fonds-des-Rivaux and Leffe. From this station I fear cultivation, that enemy to botany, will soon extirpate it. The last time I passed there, the ground was being ploughed up and burnt, preparatory to sowing.

Orchis coriophora and *ustulata*. Meadows along the Meuse, between Yvoir and Godinne, where they grew abundantly.

Rumex scutatus is so common on our limestone rock, that I was surprised to see it between brackets as doubtfully "naturalized" near Edinburgh, in Babington's Manual, and altogether excluded from Bentham's and Irvine's Handbooks.

Senecio paludosus. Island in the Meuse, opposite the village of Houx.

Stachys alpina. Valley of the Bocq, near Banche, on the border of the same wood in which grow *Aconitum Lycoctonum* and *Lunaria rediviva*.

In the spring I was invited to spend some time with a friend at Liège, and rejoiced in the thought of making quite a harvest of rare plants, but, unfortunately, bad weather effectually precluded any botanical rambles. My only captures were *Holosteum umbellatum*, which grew abundantly by the side of a ditch along the towing-path and up the hillsides in the Val Benoît, and *Veronica Buxbaumii*, very common in a lane near the railroad. The only other locality in which I have met with this latter was at Newmarket, in the parklike grounds formerly the property of the famous (?) Crockford, and which are still known by his name. In another part of the same grounds there was a good patch of *Doronicum plantagineum*, but whether indigenous, or introduced with the trees under which it grew, I had of course no means of ascertaining.

I must not omit to mention, in reference to my former Notes, that the last wet spring brought forth *Crassula rubens* and *Polygala comosa* again, in great abundance; and that our *Corydalis bulbosa* (*solida*, Smith) is the variety *digitata*, Reichenbach. We searched the valley most carefully, but could not find a single specimen with undivided bracts.

I must likewise rectify two slight misprints in my June article: instead of the Visdre, the river is the Vesdre; and our village is Houx (the French for Holly), not Honx.

A DAY'S COLLECTING AT LOWESTOFT.

By H. TRIMEN.

While staying for a short time at Lowestoft, during the past August, I collected a few plants which I think it may be useful to enumerate for the benefit of future botanical visitors to the east coast.

Lowestoft, I should first mention, is by no means a good locality (botanically speaking), and I would not recommend it to any collector. It consists of a long straggling town, divided into two parts by the river Waveney, which forms its harbour, and

which is crossed by a bridge which thus connects the two parts of the town. The new town lies to the south of the harbour, and consists of new seaside lodging-houses facing the sea, and behind them are flat damp fields and marshes. About a mile south of Lowestoft lies the maritime village of Pakefield; thence to Southwold, some eight miles further down the coast, are low sandy cliffs, with cornfields on their top, and beneath them a very sandy seashore. North of Lowestoft is an extensive heath of about four miles in length (north to south), which slopes down to the sea, and below which lie the "Denes," which are sandy flats overgrown with grass and maritime plants; this is perhaps the most productive locality. At the back of the town there are only farms and fields in a high state of cultivation, with nothing much in a botanical point of view.

After this short but necessary preamble on the dulllest of scenery, I will now proceed to mention the plants of Lowestoft, and I prefer doing this in a colloquial way than to giving a mere list followed by exact habitats, which, though perhaps useful to a scientific botanist or to one who knows the locality treated of, is very unattractive to one who, like myself, takes in a botanical periodical for amusement as well as instruction, and who does not take sufficient interest in the geography of the place mentioned to care about the precise locality of a plant growing there.

On a fine morning, then, in August, 1859, I set out with vasculum, digger, and portfolio, determined to get something or other, along the shore toward Pakefield. On the sand grew *S. Kali*, together with *Cakile maritima* and *Atriplex arenaria*. *Eryngium maritimum* was also common. On mud round the harbour I found *Atriplex littoralis* and *Suaeda maritima*, and on waste places near, *Linum usitatissimum* and *Diplotaxis tenuifolia* (some specimens three or four feet high) were common; I also found here a curious specimen of *Achillea Millefolium* in which the ray-florets were reduced to almost "nil," and the segments of the leaves very few and undivided.

Continuing my course along the shore, near Pakefield, on an artificial bank facing the sea, *Reseda lutea* had established itself, growing among *Echium vulgare*, *Helminthia echinoides*, etc. A little way inland, near here, I found *Reseda suffruticulosa* growing spontaneously (I do not say indigenously) on rubbish in plenty, as in many other places round the town. A little beyond

Pakefield I left the beach and betook myself to the high-road; in the hedges and ditches of which, *Pimpinella magna*, *Sison Amomum*, and *Lotus major* abounded; in damp hedges I had the pleasure of finding *Dipsacus pilosus*, a plant I had never before seen alive. On waste ground by the wayside I gathered *Sisymbrium Sophia*, *Carduus tenuiflorus*, *Onopordum Acanthium*, and a variety with white flowers of *Carduus nutans*. Looking over the gate of a field, a fine plant of *Silybum Marianum* gladdened my eyes. This I think by far the handsomest of the British Thistles. I did not put it in my vasculum, but carried it home in my hand, and it has made fine specimens. I found also in this field *Erysimum cheiranthoides*, which is by no means a common plant at Lowestoft.

In fields near Carlton Colville, a village to the west of Lowestoft, I collected *Centaurea Scabiosa*, *Melilotus officinalis*, *Trifolium fragiferum*, etc., and, in sandy turnip-fields, *Diplotaxis muralis*, a very common plant here. I now crossed the Waveney again by Mutford Bridge. The river just here spreads out into a lake called Oulton Broads, a good fishing locality, but with no botanical treasures, unless *Lysimachia vulgaris* and *Valeriana officinalis* can be called so. Just beyond the bridge, by the side of the road, grew fine specimens of *Verbascum pulverulentum*, a singular plant with very floury leaves and spikes of flowers, *V. nigrum* grows also near. *Feniculum officinale* is common in every hedgerow, growing to a great height, with *Tanacetum vulgare*. On a small heath opening on to the road I found the little *Linum catharticum* with the tall *Hieracium umbellatum*, while in watery places *Alisma ranunculoides* was common.

As I was now nearly north of the town, I determined on examining the heath which lay in that quarter. I was however disappointed, nothing growing there, save the usual heath plants; I discovered there however what I find to be *Chenopodium rubrum*, but which differed from that plant in being quite procumbent, and in having thick fleshy leaves, whereas all the specimens of "rubrum" that I ever have found are remarkably upright plants, and the leaves far from fleshy. On descending again to the shore, the first thing I saw was a quantity of that loveliest of plants *Convolvulus Soldanella*. They looked so beautiful that I almost thought they were modelled in wax. Of this plant I preserved a good deal; but alas for its beauty in the herbarium!

Trifolium arvense and *Beta maritima* were of course common enough. I should have mentioned before that south of the town the rare plant *Medicago minima* was common on grassy places near the sea. I had nearly reached home, tired enough with my walk, when I saw, on the bank of the road, by my side, great quantities of a small pink blossom. On gathering it I at once recognized it as a *Trifolium*, but never having seen any like it, I was much puzzled to think what it could be. I have since found it to be, without doubt, *Trifolium resupinatum*. That it was spontaneous here no one who saw the plant could have doubted for a moment. For about eighty yards of the roadside it was very plentiful, and had I known what it was, I should have gathered more than I did. This, I think, is quite a new locality for this plant, which seems to be rapidly gaining ground in this country as a native.

I hope that this little memorandum of the plants of Lowestoft may be useful to some reader of the 'Phytologist,' to which periodical I wish all possible success and good fortune.

*Some Observations on our Common Primrose, Oxlip, and Cowslip,
and on their Claims as Distinct Species.*

By GEORGE JORDAN.

For many years I have wandered over their native localities, in woods, meads, and commons, far distant from the habitations of mankind. In those places I find them undoubtedly as unvarying as when they first appeared by the command of the Creator of all things which adorn the earth's surface, and will continue so until it may please the Creator to establish a new order of things. The physical habits of each bespeak a peculiar organization, obscured and incomprehensible for the limited faculties of man to develope, however acute a physiologist.

The specification of plants in the present state of botanical knowledge is indefinite, and not sufficiently comprehensive to give to many of our plants their specific claims; and the nomenclature is in many instances not sufficiently significant; so that some good species are considered varieties, and some varieties species. In a numerous tribe of plants, frequently many of them

are so nearly allied to each other that it requires every character and habit of each to be taken into consideration to give them their just claims as species, even to a chemical analysis. The habits of those three differ as much as their physiognomy. The Primrose is decidedly an arboreal, the Cowslip a pastoral plant; the Oxlip has no predilection for any locality, being but sparingly found anywhere: no condition increases its numbers, as it does that of the Cowslip.

By agriculture the Cowslip flourishes; by agriculture the Primrose is destroyed. The Primrose may be seen in flower six months in the year, the Oxlip and Cowslip not so many weeks. I have known the Primrose's sylvan domain destroyed, and long furrowed by the plough, and then pastured: in time Cowslips began to spring, and continually increased, but no Primroses appeared,—only a few that found a refuge at the hedge, having escaped the wreck and ruin of their ancient heritage and race.

The Primrose is found in profusion in our woods and copses; the Cowslip and Oxlip are but sparingly found in their native woodland glades or commons. They all prefer a stiff, dry, rather poor soil: in rich pastures they do not abound. The Primrose likes its sylvan shade; the Oxlip, the woodland glade; the Cowslip prefers the upland mead.

It must be evident to every one what can be accomplished by art in the metamorphism of plants in the Order *Primulaceæ*, and many other tribes; so that man, by torturing Nature, has by those metamorphisms obtained, not created, a most gorgeous floral world of his own, which he only holds on sufferance. If he neglects his trust, Nature will recall the charge, and strip them of their gaudy array, and place them in their pristine state of simplicity. I have cultivated these three plants for many years with many varieties of the *Polyanthus*: those from seed produce regularly an endless variety of forms, of all shades of colour, and monstrosities.

I have not found the Cowslip, Oxlip, or Primrose to undergo much change of character in the garden.

Insects are extremely fond of the *Polyanthus*, which causes such an endless variety when produced from seed; and often, many of those plants growing near together, the pollen is immediately transmitted from one flower to another. The Primrose, in its native wilds, far distant from the *Polyanthus* of the gar-

dens, suffers no change of character; the pollen is not likely to be carried on the proboscis of those insects, as it would be on the feeding parts of insects in general.

How happy were the days of our infancy, when we in fairy groups went Maying to the Primrose copse to pick the full-blown Primroses from their mossy couch, prattling on our infantile affairs, to us then of much import, ere care in our bosoms found a place, or sorrow more than a momentary stay! With the Primrose corolla-tubes we blew our fairy trumps, then sang our morning hymn responsive to the feathered warbler's matin song, the selfsame song which their first parents raised at life's first dawn to sing their Maker's praise. Then to the meads, to pick the Cowslip flowers to make our Cowslip ball, or in our little baskets pick their corollas to make that soothing wine so much famed in those epidemics to which infancy is prone and oft so fatal.

MUSTARD-TREE OF SCRIPTURE.

Salvadora Persica, the true Mustard-tree of Scripture.

(From Sir J. E. Tennent's 'Ceylon'.)

"The identification of this tree with the Mustard-tree alluded to by our Saviour is an interesting fact. The Greek term *σινάπις*, which occurs in St. Matthew xiii. 31 and elsewhere, is the name given to Mustard; for which the Arabic equivalent is *Chardul*, or *Khardal*, and the Syriac *Khardalo*. The same name is applied at the present day to a tree which grows freely in the neighbourhood of Jerusalem and generally throughout Palestine, the seeds of which have an aromatic pungency, which enables them to be used instead of the ordinary Mustard (*Sinapis nigra*); besides which, its structure presents all the essentials to sustain the illustration sought to be established in the parable, some of which are wanting in the common plant. It has a very small seed: it may be sown in a garden. It grows into an 'herb,' and eventually 'becometh a tree; so that the birds of the air come and lodge in the branches thereof.' With every allowance for the extremest development attainable by culture, it must be felt that the dimensions of the domestic *Sinapis* scarcely justifies the last illustration; besides which, it is an annual, and cannot possibly

be classed as a 'tree.' The *Khardal* grows abundantly in Syria; it was found in Egypt by Sir Gardiner Wilkinson; in Arabia by Bové; on the Indus by Sir Alexander Burns; and throughout the north-west of India it bears the name of *Kharjal*. Combining all these facts, Dr. Royle, in an erudite paper, has shown demonstrative reasons for believing that the *Salvadora Persica*, the *Kharjal* of Hindostan, is the *Khurdal* of Arabia, the *Chardal* of the Talmud, and the 'Mustard-tree' of the parable."

Sir James adds further, that in Ceylon it attains a height of forty feet.

A LIST OF THE FERNS OF THE NEIGHBOURHOOD OF WHEATHAMSTEAD, HERTFORDSHIRE.

By E. EDWARDS.

Blechnum Spicant. Beech Bottom, Sandbridge; rare.

Pteris aquilina. Generally distributed.

Polypodium vulgare. Generally distributed. Var. *acutum* and *serratum* very fine near Brockett.

Polystichum lobatum and *aculeatum*. Hedge-banks; sparingly.

Polystichum angulare. Very fine and abundant in many places, but never, or very rarely, growing near or intermixed with the preceding. At the junction of the parishes of Wheatthamstead and Sandbridge, in the Devil's Dike (an earthwork probably of the contests before the Norman conquest), it occurs in boundless profusion.—Surely this may *always* be distinguished from its congeners, although late in the year, and in winter, a few of the most mature fronds may seem to put on some of the appearances of *P. aculeatum*.

Lophodium multiflorum. A very scarce Fern hereabouts. The only examples I have met with occurred on hassocks of *Carex cæspitosa*, at the margin of the Lea river.

Lophodium spinulosum. Dowdell's Wood; rare.

Lastrea Filix-mas: *a*, *affinis*; and *b*, *Borreri*. Plentiful in woods and lanes; *c*, *abbreviatum*?, more rare.

Athyrium Filix-fœmina: *a*, *convexum*; *b*, *incisum*; and *c*, *molle*. I believe that each of these (species?) may be detected in Dowdell's Wood.

Asplenium Adiantum-nigrum. In a few places.

Asplenium Trichomanes. Sandbridge, Little Ayot.

Asplenium Ruta-muraria. Walls, Lamer House.

Phyllitis Scolopendrium. Mackery End, Brockett.

Ceterach officinarum. On an old brick wall in the adjoining parish of Harpenden.

Ophioglossum vulgatum. Pastures in several places.

BOTANICAL SKETCHES.

Botanical Sketches from North Wales. By a Correspondent.

As the way or ways to North Wales are about as well known as the way to the 'Elephant and Castle' or the 'Angel,' Islington, space need not be filled with descriptions of routes which are now as well trodden as the road to Bath.

The traveller, or tourist, or botanist, may enter the Principality either by the Llangollen-road station, on the Shrewsbury and Chester line, or by the ancient city of Chester, which is now *reachable* by three lines,—the London and North-western, the Great Northern, and the Great Western.

Some botanists might prefer to go on by rail as far as Bangor or Carnarvon, the nearest stations to the grand botanizing grounds of Llanberis, Nant Francon, the Great Glyder, Twll Du, and Snowdon. The present historian of Welsh Botany began at the Llangollen-road station, and the following is a brief account of what he saw.

My botanizing in Wales this season (1859) began on the 20th of June, when I was within view of the Castel Dinas Bran and the Eglwyseg Hills.

Here the aspect of the entire country within sight, including the vale of Llangollen and the mountains on either side of the Dee, is totally different from the scenery of England. The lofty, steep, craggy mountains, the deep vale, the rocky channel of the impetuous river, remind the visitor that he is no longer in rich, green, comfortable England. In the vegetation there is nothing to mark this transition.

One of the commonest plants on the stone walls and on the waste spots on the road leading to Llangollen town is the Weld, or Dyer's-weed (*Reseda Luteola*).

This plant, which abounds about Llangollen, is not very common as the traveller advances up the vale of the Dec.

I made a list of the plants growing near and on Castel Dinas Bran, and this will include the plants of Llangollen, or all that I observed during my short stay in this fashionable place. This list has been already published in the 'Phytologist,' vol. iii. 379.

The next morning, viz. the 21st June, I left by coach for Corwen, where I met by appointment my friend, W. P., and we walked on to Llandderfel (eight miles), where we arrived in time for dinner.

On the 22nd we walked up the hill from Llandderfel and along the Bala and Llangynog road to Pont-y-Beddws, about halfway between these two places. In the bed of a mountain-torrent which crosses the road, which is carried over the glen and stream on a very rustic and picturesque bridge, we botanized an hour or two.

The results of our botanizing were not very remarkable. *Pinguicula vulgaris* is common in all upland boggy places in Wales from 300 feet above the level of the lower streams to 3,000 feet; also *Saxifraga stellaris*, not so common, but plentiful in the glen of Pont-y-Beddws. *Vaccinium Myrtillus* abounds everywhere on heathy parts of the Berwyns, also *V. Oxycoccus* and *V. Vitis-idea* are far from being unfrequent. *Lysimachia nemorum* and *Hypericum pulchrum* also abounded in this place. The Ferns were of the commoner species, viz. *Pteris aquilina*, *Athyrium Filix-fœmina*, *Lastrea Filix-mas*, *L. dilatata*, *L. Oreopteris*, *Blechnum boreale*, etc. etc. On the verge of the road where the bridle-road to Llandderfel joins the Llangynog road, there is plenty of the elegant *Wahlenbergia hederacea* in a station not likely to be destroyed by modern improvements for some considerable time. It will be long ere the builder makes an inroad on the domain of this beauteous floral gem.

The same day we searched about an artificial small lake in an upland pasture field near Llandderfel, and collected some magnificent examples of *Botrychium Lunaria*, nearly a foot high, with branching fertile fronds.

This completed our botanizing on the 22nd.

The 23rd was spent in looking round and into Llyn Creyny, about three or four miles from Llandderfel. On our way thither, in a field just across the high-road from Corwen to Bala, on the north side of the river Dee, several fine examples of *Vicia Orobus* were met with; also on all the pastures *Habenaria bifolia* was common, and on some elevated moist grassy nooks and corners

H. albida; the latter not nearly so common as the former. *Orchis maculata* is the commonest *Orchis* in Wales, as it is everywhere else in the British Isles. In a grassy bog, before reaching the turnpike-road, not far from the 'Boot' inn, a few colonies of *Orchis latifolia* were seen. This was the only locality where this species was observed in this neighbourhood.

In an old dry stone wall, on the hill to the north-west of Llyn Creyny, there are many patches of the neat and pretty Parsley Fern (*Allosorus crispus*). The pastures of this hill also produced *Habenaria bifolia* and *H. albida*, the former more plentiful than the latter; also numerous plants of *Hieracium*, not in flower; probably *H. tridentatum*. *H. vulgatum* was in flower everywhere from Llangollen to Llan-y-Mowddy.

The lake is small, probably nearly a mile in circumference. The water is pure and clear as crystal; it abounds in pike, which suffer few other fish to reach a large size.

The botanical productions of this small alpine lake are *Isoetes lacustris*, *Littorella lacustris*, *Lobelia Dortmanna*, *Subularia aquatica*, *Potamogeton natans*, and probably *P. pusilla*, one or two of the *Myriophylla*, and the queen of British flowers, the magnificent Waterlily.

On returning, we visited the remains of the ancient British or Roman camp, Caer Creyny, on the summit of a lofty hill, on which Sir W. W. Wynne erected a tower, or speculatoria, which is very conspicuous. From this station a fine view is obtainable of the vales of Glyndiffwy and Corwen. The celebrated pass and fall of Pont-y-glyn, between Cerrig-y-Druidion and Corwen, is visible from this point.

The foss and vallum of this ancient fortress are very entire, though the former is very much encumbered with the débris of the latter. Like that at Dinas Bran, it had been originally constructed of small stones, and there were some remains of vitrification.

In passing down the hill towards the 'Boot' inn, we walked on what appears to be an ancient Roman road, and which may probably be a portion of the same ancient *via* which led over the Berwyns from the south, and which is so very complete about a couple of miles above the celebrated fall of Pistyll Rhaiadr.

Before reaching the 'Boot' inn we turned in at a gate into a sort of orchard, at a farm on the old road to Bala, and under

the trees saw abundance of the rare Dwarf Elder (*Sambucus Ebulus*), commonly called Dane-wort, and supposed by some learned botanists to be the true *Androsæmun* of the ancients. What say "S. B." and the etymological botanists who strive to enlighten the readers of the 'Phytologist' on this abstruse point? The superstitious legend relates that this plant grew up where the Danes were slaughtered. The Danes might reverse the point of the myth, and say that the plant grew up where the Saxons were killed. The Danes, however, did not write the early history of England, or the plant might perpetuate the memorial of something not so flattering to Anglo-Saxon vanity.

The Dane-wort, or Dwarf Elder, has a very fetid smell, and the suspicious qualities and forbidding appearance of the plant may have given origin to the name. The Danes were no fanciful terror, no superstitious bugbears, but a sad reality, a cruel scourge to this land.

The 24th was spent in going to Bala, and on our way to this rather pretty market town of Merionethshire, *Cynoglossum Ompalodes* was observed, well established, though in a park, called Brynhilwg. *Hypericum Androsæmun* was also seen by the roadside near Bodweyne.

The afternoon of this day was devoted to home botanizing; and in a lane certainly less than a mile from a farm called Plasissa, where the young ladies are fond of flowers, and very successful in the cultivation of their floral favourites, several fine patches of *Lamium maculatum*, with variegated leaves, were observed.

As this was one of the domestic botanical pets, it may be a question whether the plants seen in the lane migrated from the garden to the hedge, or escaped from cultivation. Appearances, it must be admitted, are in favour of the latter supposition.

Several plants then and there cultivated were, by reputation at least, supposed to be from wild stocks. This was not, on investigation, found to be invariably the case.

The 25th was devoted to a journey over the Berwyns from Llandderfel to Pistyll Rhaiadr. This was the longest walk we had as yet undertaken.

Our course was down the left bank of the Dee, which we crossed about half a mile above Llandrillo. Near the bridge *Thalictrum flexuosum*, or one of the varieties or species into

which *T. minus* has been split, was seen in tolerable plenty. *T. flavum* is said to grow in the vale of Eydernion, but we did not see it,—I did not,—but we saw *Cynoglossum officinale* in Llandrillo, a scarce plant here, and *Geranium lucidum*, which is not scarce in several parts of North Wales.

The vegetation of the Berwyns would soon be catalogued. The common Heaths, the Milkwort, Tormentil, a few Rushes (*Junci*), a dozen or so of *Cyperaceæ*,—for example, *Scirpus cespitosus*,—a few *Carices*, and *Eriophorum*. The most common plant next to *Calluna vulgaris* is *Juncus squarrosus* (Goose-corn). This constitutes almost the sole vegetation of large, flat, elevated, moist mountainous tracts. Cultivation is encroaching on the brow of the mountain, which is in many parts very steep. Miles of a flat dreary waste intervene before the ridge or summit is reached.

The Ferns begin to disappear at about 1,500 feet of elevation, and towards the summit there is no living creature; neither reptile nor insect is visible. There is however no want of vegetation even here. But a single pair of ravens were the only birds we observed. On the steep, rocky south side, sheep and even colts were observed at great elevations. Here the herbage was of a different sort, being mostly of a more succulent nature than that on the north side. This side, the southern, is hollowed out into immense cwms (combes), flanked by steep sides, and terminating in rocky prominences on the mountain-ridge. These narrow combes, after some miles, open out into broad fertile fields and meadows, such as in Scotland would be called *straths*. In the combe above Pistyll Rhaiadr there is, at the head of the opening in the mountain's side, a circular basin of pure water, somewhat like the Loch-na-Gat on Ben Lawers. There was no vegetation whatever in this Berwyn pool.

We regretted that we had not a pinch of *Anacharis Alsinastrum* to throw into it. It would have been a charitable act if there be any living creature in it; and if there be not, it would have afforded some sustenance to the ducks and other aquatic birds by which it is visited in the winter months.

It would be next to impossible for a stranger to reach Pistyll Rhaiadr from Llandrillo without the aid of a guide. It would be easy for such as are naturally endowed with strong thews and firm resolution to accomplish the feat of crossing the mountain; but when the summit is reached, the traveller is still two or three

miles from the fall, and no direction given him on the other side would assure him of a successful journey through these wilds to the Pistyll.

We had the advantage of a kind friend, who was eyes to us as Jethro was to Moses and the Israelites in the wilderness. He came as far with us as to be able to show us the precise locality of the fall, which we could not see till within a hundred yards of it.

We descended the glen, keeping on the right side of the rivulet which issues out of Llyn Cwm, till we reached the little river Rhaiadr, which falls into the stream we descended, and forms this celebrated fall. At this time the water was scanty, but the rocks were as formidable as ever. The dry season, though it diminished the quantity of water in the spout, did not diminish the height of the crag, which has the fame of being the highest in Wales;—not the loftiest rock, but the longest waterfall.

Those who have seen all the Welsh pistylls, spouts, waterfalls, or cataracts, will be better able to testify to the merits of this celebrity than I, who am not personally acquainted with many of them.

The water which fell when we were there would be sufficient to turn a heavy wheel, and it fell down an almost perpendicular black crag, said to be 240 feet high. When near the bottom, the stream rushes through a natural arch, and falls into a deep basin, flanked by two prominent rocks.

This is a miniature Niagara, or a Welsh Niagara. It has all the accessories of its Transatlantic relative, viz. a deep, bosky dell, slippery rocks, paths, bridges, and an inn. It wants nothing but plenty of water to rival its western namesake. Like the Irishman's dinner, where the garnishing was present and the roast beef absent, the aquatic element is very deficient.

There is a good story printed somewhere; but if not printed, it has long been in oral circulation. Some ancestor of the great Wynne family, or some scion or relative of that ancient stock, engaged a famous artist, a foreigner, to paint a picture of this waterfall. When the work was finished and submitted to the squire, he blamed the artist for leaving out the sheep, which, he said, gave vitality to the scene. In Wales, and in some parts of England, the word *sheep* is pronounced exactly as *ship* is; and in Wales the word when used in the plural is *ships*: of this we had

sufficient evidence when at the falls. When the squire asked the artist wherefore he did not paint a few sheep on the canvas as adjuncts to the picture, the artist said, "Ships do you want? You shall have a fleet of them." He took back his painting, entered some vessels sailing boldly up against the rock, and thus gave vitality to the scene.

The Gothic-built inn which is mentioned in some of the guide-books, is not quite so mythical as the ships on the mountain stream below the falls of Pistyll Rhaiadr. Speaking courteously or figuratively, it, the house built by Sir W. W. Wynne, may be called an inn, even although the fare obtainable be humble. The fair hostess is civil, and the charges very reasonable.

We met here with an original, in the person of a burly Welsh farmer, of Llansilin, who was here shearing his *ships*, as he called them. He took us for mining engineers, or geologists at least, and wished us much to see some specimens of ore which he picked up in a brook which ran through one of his fields, and over a vein of lead. He also told us of some pieces of ore that had a yellow hue, and probably contained copper, or even gold.

He was desirous of getting our opinion about the metalliferous value of the ores hereafter to be discovered on his farm, and we were solicitous about the nearest way back to Llandderfel, which we guessed could not be far short of twelve miles across the mountain, the larger portion of it without so much as a track to guide us.

The farmer before mentioned told us to ascend to the head of the fall, and keep along the brook (*bruck*, he called it) till we reached some sheepfolds, and then to walk towards the ridge of the hill; when this was reached, neither to turn to the right nor to the left, till we met the Llangynog and Bala road. We knew our way right well when we got to the road, and there was no difficulty in reaching it.

We asked our informant the distance from the falls to Llandderfel. He said that it was a ride of five hours. He did not tell us how long a walk it was.

On returning we clambered up the steep rocky eminence which is on the right side of the Pistyll, and at the summit of this projecting spur of the mountain we had a long and delightful prospect in the direction of Llanrhaiadr, Llanarmon, Llansilin, and Oswestry.

On the rocks here *Cotyledon Umbilicus* grew profusely and luxuriantly. The extreme altitude of this plant is estimated at 900 feet above the coast line. From observations made in Wales last summer (1859), its extreme recorded elevation was found to be somewhat under the mark. Probably 50 or 100 yards might be added to the estimate given above.

The southern slopes of the Berwyns are clothed mostly with Grass. The Rush, Heath, and other moor plants, only appear near the summit, but they clothe the entire north or Welsh side slope, till within about a mile or so of the vale of the Dee.

Among the Heath, as we came along, fine specimens of the Cowberry, *Vaccinium Vitis-idaea*, were noticed, with here and there the straggling or trailing stems of the Cranberry, *V. Oxycoccus*, now exhibiting its beauteous floral gems: it is a lovely little creeper.

Plenty of the Cloudberry, *Rubus Chamæmorus*, grows in peat-bogs; but we did not see any specimens.

We reached home in little more than five hours, well prepared to enjoy the repose of the morrow, which was the day of rest.

Our botanical knowledge was not much increased by this long walk. The only plants collected at the falls were *Saxifraga hypnoides* and *Geum rivale*. There are many other plants there, but they are mostly of more frequent occurrence than these are. Among these may be mentioned *Cardamine sylvatica* or *C. hirsuta*, *Luzula sylvatica*, *Valeriana officinalis*, and multitudes of the Lady Fern, etc. The Woodrush appeared on the very summit of the mountain.

Our next long walk, on the 27th June, was to Llan-y-Mowddy, about eighteen miles from Bala.

The road to this, one of the most interesting of all the pleasant vales of Wales, and there are many, is through Bala, along the eastern side of the lake Llyn Tegid.

From Llandderfel the most picturesque route is to cross the river at the lower end of the village, and to go along under the wall of Plas. About a mile from the bridge there is a very agreeable little view of a mill, a deep glen, a bridge, and a waterfall. Here the road joins that from Llangynog, and both united pass under an extensive hanging wood, which clothes the steep rocky mountain from the base nearly to the summit: this wood

is on the left-hand of the traveller to Bala; on the right there is the finest possible view of the charming vale of Edeyrnyon, Bodweyne, etc. etc.

This road to Bala increases the distance, but it also adds much to the pleasure and interest of the journey.

There is a good road along the east shore of Llyn Tegid, commanding good views of the lake, the opposite bank, the village of Llanycil, Sir. W. W. Wynne's fishing-cottage, etc. etc. Fastidious critics might find occasion to animadvert on the architecture of this lodge on the borders of an alpine lake; but our business is not criticism. A botanist may walk along the shores of Bala's lake, and gather the flowers that ornament its banks and braes, and admire the lovely prospect of lofty mountains, sheltered farms, placid pools, and leaping torrents, without carping at modern exhibitions of æsthetics, or wearying his readers, if he has the good hap to enjoy this felicity, with accounts of artistic failures.

It may be as well to remind the pedestrian that after passing through the picturesque, simple-looking village of Llangower, about halfway up to the head of the lake, there is no inn nor public-house till Llan-y-Mowddy is reached, a matter of distance of at least a dozen miles. This may be said by some to be only a trifle; but it is as well to know it beforehand. There is usually a keen, appetizing air on the Welsh mountains.

On passing through Llangower the traveller soon reaches the upper or western end of the lake, and leaving the charmingly situated village of Llanwchllyn half a mile on the right, the ascent up the mountain commences.

The road, a good one, is carried along the side of the mountain, with a gentle acclivity and few undulations, for five miles. The mountain is on the left, and the picturesque vale of the Twrch, with its impetuous, headlong, brawling stream, on the right. At this time it did not contain much water, but after heavy rains it is formidable enough to those who have to get across its swollen torrent. Several very fine streams and rocky dells cross the road before reaching Bwlch-y-Groes.

In the vale of Twrch there are some scattered dwellings situated agreeably enough. But the most interesting object on the right is the sharp, serrated ridge and pointed summit of Arran Pen Llyn, which rises to upwards of 3,000 feet altitude. The

best way of ascending the point is from the village of Llanwchlyn, and not by the road from Bala to Dinas Mowddu. This feat was not attempted by us; but my friend and companion performed it *solus*, only a year or so back. He visited both Arran Pen Llyn and Arran Fowddy, the higher of the two peaks, and descended through a very difficult and steep declivity into the vale of Dwffu and Llan-y-Mowddu.

About halfway up the mountain we came to a steep, grassy meadow, on which we met with abundance of *Habenaria bifolia*, next to *Orchis maculata* the most common of its Order in North Wales; also fine plants of *Vicia Orobus* and *Trollius europæus*. The Elder-tree was in full flower then, and it abounds in the hedges, and the White-thorn blossom was not quite gone. But the loveliest ornament of the roadsides was then the exquisitely beautiful Wild Rose, *R. villosa* or *tomentosa*; the intense rich colour of the flowers contrasted finely with the greyish-green hue of the foliage.

Another floral ornament of the roadside, the Mountain Violet (*V. lutea*), appeared here, both under its yellow and blue varieties.

On reaching the summit of the pass, which is a vast extent or table-land of heathy, moory, peaty ground, and certainly not much under 1,500 feet high, we had very extensive views, viz. the Berwyns on our right, when looking to the north-west; the high hill Moel Fama, near Denbigh, on which there is a very lofty, conspicuous column; before us, but further west, appeared the Carnarvon mountains Carnedd Llewellyn, Carnedd David, and Glyder Fawr, which form the pass of Nant Francon. Still further appeared the king of Welsh mountains, Snowdon, which bounds the west side of the far-famed pass of Llanberis. The Rivels, Arrenig, and other mountains of Merionethshire, were in view, and the two lofty peaks of the Arrans were a noble foreground to this mountain panorama.

We were able to distinguish satisfactorily both the lofty points of Snowdon, viz. Crib Coch and Widdyfa, with the remarkable crater-like hollow that lies between them.

From this point there is an excellent view of the two summits of the Arrans, and of the sources of the Dwffu (Dovey); and now the road passes through the pass by a rapid descent.

This pass of Bwlch-y-Groes, or the Pass of the Cross, so called

from a cross which was erected on the summit, or the entrance to Llan-y-Mowddy from Bala, is one of the most imposing scenes in all North Wales. It is not like the pass of Llanberis nor like that of Llangynog; though it is more like the latter than the former.

On the right are the craggy spurs of the Arrans, the loftiest mountains in Wales, except those of Carnarvonshire. On the left there is a tremendously deep, narrow dell, bounded by the rounded mountains which lie between this point and Garthbibio, the prolongation of the Berwyns. These mountains on the left are partly well covered with greensward, and partly with the stony débris which has been rolling down and accumulating for ages. The sheep graze on these green stripes with impunity, for they are as sure-footed as goats. It would be extremely dangerous for other animals not so agile as goats and mountain-sheep to venture where the footing is so precarious.

This part of the mountain is intersected by narrow, deep, fearful fissures, which are almost at right-angles to the ravine at the base. A wilder or a more awful mountain scene can hardly be conceived.

In less than two miles from the summit the traveller reaches the vale of Llan-y-Mowddy. The church and parsonage are about two miles further on towards Dinas Mowddy.

The latter-named town stands in a most extraordinary spot, surrounded as it is on all sides by lofty hills, where the vales unite. This vale and village of Llan-y-Mowddy is somewhat like a cup or basin, the sides of which are formed by four or five, bluff, rounded, green mountains, with no apparent egress. The pass to Dinas is not visible till the traveller has passed beyond the church.

On returning by the same road there is a fine view of the rocky vale of the Dovey; the first or upper falls are but a short distance from the road on the right, going from Bala to Dinas, and on the left in returning. They are near the entrance of the vale, or about two miles from the church of Llan-y-Mowddy.

We chose the left, or west side of the lake of Bala, for our return journey. This gave us the opportunity of seeing the three streams which supply the Llyn Tegid, viz. the Twrch, probably the most considerable, and the Dee, which rises between Arran Pen Llyn and Arran Fowddy, and the Lliw, which rises in the

Arrenigs, towards the west. Llanwehlyn is beautifully situated at the foot of these lofty mountains, on the upper end of the lake, and is watered by the three above-mentioned rivers; the road from the village joins the Bala and Dolgelly road about half a mile from the church.

By this we travelled along the Llanyceil side of the lake, through Bala, where the Merionethshire Militia were assembling, past Bodweyne, and so home to Llandderfel.

To Llangynog was our next journey, along the Bala road, over the Berwyns, a road now about as familiar to us as Piccadilly. After ascending the steep hill opposite Llandderfel, whence there is a fine view of the church, the village, and the white monument, there is nothing interesting on the road till Pont-y-Beddws is reached, a place previously noticed or described. On either side a bleak desolate moor extends, grazed by a few mountain sheep, with here and there a stack of peats (winter fuel). This continues for five or six miles, at which distance from Llandderfel the traveller reaches the celebrated pass of Llangynog. Here the road, by an easy declivity, is carried along the southern slope of the Berwyns; the mountains, which are here very steep and lofty, are on the traveller's left, and a deep glen, which opens out into a vale, is on the right. In the bottom of this dell or vale runs the infant river Tanat. All the waters from this side flow into the Severn, while all on the other side increase the waters of the Dee.

The only remarkable plant observed while descending this pass was what is often called *Spergularia rubra*, but it is well known by its English name, Sandwort. The altitude of *Lepigonum rubrum* is estimated at 200 yards. In the pass of Llangynog it was noticed at an elevation probably of 300 yards, certainly far above 200 yards. This plant was noticeable on another account: it rarely appears in Merionethshire at any altitude.

This pass is celebrated for its Ferns, especially *Polypodium Dryopteris* and *P. Phegopteris*, which may be said to abound everywhere in this county; but above all the beautiful Parsley Fern seems to have selected the pass of Llangynog as its headquarters. About a mile or so from the upper end of the pass, this lovely Fern occurs sparingly with *Polypodium Dryopteris*, *Asplenium Trichomanes*, the mountain form of *Lastrea Filix-mas*, etc., but about a mile from the village, in that part of the pass beyond the turnpike, named Milir Gerrig (the Stony Mile), the

Parsley Fern has usurped the locality, to the entire exclusion of all the other members of the family. This part of the pass, which has no inconsiderable resemblance to some parts of Llanberis, is nearly carpeted with this Fern; the size of the plants is as remarkable as their abundance.

On the *crede experto* principle we can recommend the inn at Llangynog for courteous treatment, good fare, and very moderate charges. There are many Welsh village inns where the fare is adequate and the tariff moderate, but where comfortable lodging for the night is not to be expected.

A good bed and clean airy bedroom are as refreshing to a weary man as a good meal is to a hungry one. Both may be had at Llangynog at moderate costs.

Tourists usually give the high-roads, such as the Llangollen and Corwen road, that by Mallwyd and Machynleth, etc., the preference, because coaches and other conveyances use these well-frequented ways. But by adopting these well-beaten tracts, such places as Llansilin, Llanarmon, Llanrhaiadr, Llangynog, and the southern and most romantic side of the Berwyns are unvisited.

From Oswestry to Llanrhaiadr, through Llansilin, is an easy walk, and from the latter place Pistyll Rhaiadr may be visited, and the tourist may proceed over the hills above the fall to Llangynog, whence he may visit the *cul-de-sac*, Penanth Garth, and thence pass onward to Bala and Dolgelly by Llandderfel.

Our last day's botanizing in Merionethshire was in the direction of Llangwm and Cerrig-y-Druidion.

We went in quest of *Listera cordata*, to a locality from which specimens had been previously sent by our friend John Jones, the worthy parish clerk of Llandderfel, who kindly volunteered on this occasion to be our guide to the precise spot where this floral rare gem is to be found.

Our direct road was by the lower end of Llyn Creyny, where we had previously been. From this we ascended the hill above the lake, and by a very steep declivity reached a rather narrow vale, called the Cooms, where there are the remains of the old road from Bala to Pont-y-Glyn, containing a strip of meadowland on the banks of a rivulet. The path crosses the brook, and passes by a farm, whence the ascent of the mountain commences by a zigzag, almost precipitous road.

In the grassy pastures on the table-land *Habenaria bifolia*, *Orchis maculata*, *Narthecium ossifragum*, beginning to open its pretty, intensely yellow flowers, and fine specimens of *Botrychium Lunaria* were observed.

In waste parts of this mountain farm-steading, the usual plant of all country dwellings in this district, *Artemisia Absinthium*, abounded, also a very rough and broad-leaved variety of *Mentha viridis*, and a much rarer than either, viz. *Peucedanum Ostruthium*, Master-wort, said to be common in gardens in North Wales. Here it was common enough, not in the garden, but on what would be called in Scotland the *town lone*, or open space leading from the cowhouses to the fields. In the garden-hedge we saw fine examples of what the Cambro-Britons call the Yellow-tree, *Berberis vulgaris*. The hospitable occupants of this remote alpine township invited us to enter their house and partake of their hospitalities, an offer which it would have been churlish to refuse.

After rest and refreshment we went up the mountain, and in less than a quarter of an hour's walk had the pleasure of seeing this rarity growing profusely among the *Sphagna*, covered by the long Heather.

After supplying ourselves and friends with good specimens,—for we have as much pleasure in contributing to the completeness of their herbaria as in furnishing our own,—we descended the mountain by another tract.

On our right we came to a deep, thickly-wooded glen, or dale, or fissure of the mountain, with a rattling stream at the bottom. We descended with some difficulty, and along the declivity found fine specimens of *Melampyrum sylvaticum* in full flower. *M. pratense*, the common woodland species in the south of England, did not appear.

The woodland Cow-wheat is not very correctly described in the 'Illustrated Handbook of the British Plants.' The branches are scarcely spreading, they are rather *erect*; the bracts or floral leaves are not entire, but rather furnished with *long teeth* at the base; the corolla is deep-yellow, but *not small*; the plant is from six to eight inches high. In *M. pratense* the stalk is usually from twelve to eighteen inches long.

Besides the plants common in such localities, we saw *Circœa lutetiana*, or what appears to be this species. The alpine form, *C. alpinum*, might be expected: two hundred yards is a rather low estimate for the altitude of this species.

We were informed that *Hypericum Androsæmum* grows in this alpine dingle; if this be so, its altitude is estimated at too low a figure; the side of this mountain is surely more than two hundred yards above the coast-line. It is at least as much as that above the level of Llyn Tegid, and the altitude of this pool is surely above a hundred yards, if we may judge by the rapid current of the river Dee.

This concludes the present rather extensive rambling article on Welsh botany. In dramatic phraseology, our readers are informed that the actors were their ancient favourites, W. P. and A. I.; that the scene was Merionethshire, only impinging here and there on Denbighshire and Montgomeryshire; the distance traversed in all, a hundred and seventy miles; the time was from the 20th of June to the 2nd of July inclusive.

The hospitalities of our Cambro-British friends have been already recorded; and it is but just to them to state that their communicativeness on all subjects connected with our pursuit was quite disinterested.

Their urbanity and intelligence contrast favourably with the experience of our reverend contributor who furnished the Flora of Ville Dunkirk. (See 'Phytologist,' vol. iii. p. 289.)

All the information they could give about localities was readily afforded, unaccompanied with that troublesome and impertinent inquisitiveness which many of the brotherhood have noticed or complained of in parts nearer home. Our friends in Wales never asked us what we did with our acquisitions, nor why we went a score of miles to look at a plant, or to get a specimen which in their estimation would have been dear at a groat the hundred.

THIRSK NATURAL HISTORY SOCIETY.

Botanical Exchange Club.

The December meeting of this Society was held upon the evening of Monday, the 5th instant. The receipt of parcels from Misses Gifford and Warren, Messrs. Hebblethwaite, Watson, and Windsor, was announced.

Proceedings of the Botanical Society of London.—Mr. H. C. Watson has enclosed in his parcel a number of copies of the 'Proceedings of the Botanical Society of London,' vol. i. part i. (the

only part that was ever published), for distribution amongst the members. It contains a record of the meetings of the Society, from its establishment in July, 1836, to November, 1838, and several original papers on local and general botany, some of which are illustrated with plates.

German Plants, from C. H. Schultz.—Mr. Watson has also sent us a packet of German plants, which was sent by Herr Schultz to the Botanical Society of London after its suspension.

The January meeting of the Society was held on the evening of Tuesday, the 10th instant. The Rev. W. T. Kingsley, of South Kilvington, near Thirsk, was admitted a member. Mr. J. G. Baker announced the receipt of parcels from Miss Atwood, Messrs. Barton, Bean, Flower, Hind, Hunt, Ingle, Knights, Linnell, More, Norman, Purchas, Richardson, Varenne, and Windsor, and communicated the following notices:—

“*Thalictrum calcareum*, Jordan. During the past summer I gathered what I understand as this plant upon the rocks of Twll Du, in Carnarvonshire. Doubtless it is the same plant that has several times been noticed by other botanists as growing at that well-known locality.

“*Batrachian Ranunculi*. Mr. A. S. More sends from the Isle of Wight a series of beautiful examples of Batrachian Ranunculi as under:—

“*R. trichophyllus*, Chaix. Pond near Westridge.

“*R. Drouetii*, Schultz. Slow stream in Brading Marshes.

“*R. Drouetii*, the form with floating leaves. Brading Marshes.

“*R. Baudotii*, Godr. Ditches in Brading Marshes.

“*R. floribundus*, Bab.; No. 1. Near Yaverland.

“*R. floribundus*, No. 2. Ditch by Lake Common.

“*R. floribundus*, No. 3. By the causeway near Sandown.

Mr. H. C. Watson sends *R. Drouetii* from Surrey; Mr. J. T. Syme, and others, examples of *R. circinatus* from various stations; and I have gathered a supply of *R. confusus* in Coatham Marshes, and of *R. heterophyllus* in the Thirsk neighbourhood.

“*Fumaria parviflora*. Mr. W. Bean, Jun., sends this species from fields at Seamer, near Scarborough, north-east Yorkshire. It is new to the Humber province, for although the name is given in the ‘Flora of Yorkshire,’ yet no special locality in the county for it was known previously.

“*Enarthrocarpus lyratus*. This Crucifer, one of the Wands-

worth aliens, has been met with on rubbish-heaps at Pendleton, near Manchester, by Mr. Richard Buxton, the author of the Flora. Dr. Windsor has forwarded a specimen.

"*Drosera anglica* is sent by Mr. H. Ecroyd Smith from Woolston Moss, near Warrington. It is not given as a plant of the Mersey province in the fourth volume of the 'Cybele,' probably by oversight, as it is acknowledged as such in vol. i.

"*Spergularia rupicola*, Lebel. Of the plant given under the name of *Spergularia rupestris* in the fifth edition of the London Catalogue, Mr. J. T. Syme sends an example from Guernsey, and writes respecting it to the effect that Dr. Lebel described it under that name in 1848, in his 'Recherches et Observations sur quelques Plantes nouvelles, rares ou peu connues de la Presqu'île de la Manche,' but that as there is already a *Spergularia rupestris* of Cambacères, which is not the same, he now calls it *S. rupicola*, Lebel. It is common in Guernsey, where it has been observed also by M. Le Jolis, of Cherbourg. More recently Mr. A. G. More has detected it on chalk cliffs in Scratchell's Bay and on ledges behind the village of Niton, in the Isle of Wight. In habit of growth, *S. rupicola* most resembles *marina* (i.e. *marginata*, DC.). The root is strong and thick, the stems are tufted, the flower-heads are larger, and the panicle is more separated from the leaves, and more regularly racemose than in *media*, but the capsule scarcely exceeds the calyx, whilst in *marina* it is half as long again. The seeds are invariably *wingless*, in size intermediate between those of *rubra* and the wingless seeds of *media*, when mature nearly black in colour, obovate-pyriform in shape, neither so flat as in *media* nor so distinctly triquetrous as in *rubra*, with a rough, raised border, which runs round about two-thirds of their circumference; so that in the seeds the range of gradation of the four supposed species is as follows, viz. *rubra*, *rupicola*, *media*, *marina*. In all probability, if our members will examine their collections, *rupicola* will be found to grow upon coast cliffs in other parts of Britain proper besides in the Isle of Wight. By the late Mr. S. Gibson ('Phytologist,' Old Series, vol. i. p. 218) an '*Arenaria marina*, β *hirsuta*,' is mentioned as growing on Newlyn Cliffs, near Penzance, and 'Phytologist,' o. s., vol. iii. p. 332, Mr. F. J. A. Hort enumerates several stations for a plant which it is not unlikely may be the same as that of which I am now speaking. Of this last I believe that

several specimens were distributed through the Botanical Society of London.

"*Arenaria leptoclados*, Gussone. Mr. A. G. More has forwarded from cultivated fields at Bembridge, in the Isle of Wight, specimens of a plant under this name. I find that I already possess, marked '*A. serpyllifolia*, var. *tenuior*,' Koch, what appears to be the same, from the neighbourhood of Warwick, from Mr. T. Kirk, and that I have gathered it in fallow fields in two stations in North Yorkshire, neither of them very far from Thirsk. Probably it has often been collected in this country, and passed over as *serpyllifolia*, but there does not seem to be any reason to doubt that it is what has been described as a distinct species by various recent Continental authors. As compared with genuine *serpyllifolia*, *leptoclados* is greener in colour, and more graceful in its habit of growth, the stems are more slender and more diffuse, the panicles narrower and more elongated, not level at the top, but mostly lengthened out into an irregular raceme, the hairs upon the leaves and calyces longer, more spreading and more conspicuous, the sepals sharper, thinner in texture, and more strongly nerved, the capsules smaller in size, less ventricose in shape, and more yielding under pressure. For information respecting it the works of Gussone, Reichenbach, Lloyd, Boreau, and Godron may be consulted. By Lloyd, for the western departments of France, *leptoclados* is marked as 'very common,' *serpyllifolia* as 'very rare.' With us it would seem to affect cultivated fields, and M. Crépin ('Notes sur quelques Plantes rares ou critiques,' p. 7), who considers it to be a distinct species, states that he meets with it in Belgium in similar places. Mr. More also sends from the coast sandhills at St. Helen's, in the Isle of Wight, specimens of another *Arenaria*, with viscid stems and calyces, strongly and irregularly nerved sepals, as compared with ordinary *serpyllifolia*, with heads much fewer in number, and petals, sepals, capsules, and seeds much larger in size. Probably this is *A. Lloydii*, Jordan, Pug. Plant. Nov. p. 37, a plant stated by Lloyd to be frequent on walls and sands near the sea in western France.

"*Stellaria media*, var. *apetala*. Mr. More also sends from the Isle of Wight a slender, apetalous, fragile, clear-green Chickweed, which is probably *S. Borœana*, Jordan, Pugil., *S. apetala*, Boreau, Pl. du Cent., 2nd edit. I have seen what I take to be the

same, from other parts of Britain, and have not been able to distinguish between this plant, *S. neglecta*, Weihe, and *S. media*. For descriptions, the works mentioned above, and Lloyd's 'Flore de l'Ouest,' may be consulted.

"*Cerastium pumilum*, Curtis. Mr. More also sends from Bembridge Down, in the Isle of Wight, a series of specimens of this long-lost species. It is a plant which no doubt most of our members will be very glad to have. It is closely allied to *C. tetrandrum*, but differs in its manner of growth, and by its curved pedicels.

"*Althæa officinalis*. Mr. W. Richardson sends examples from 'bog above Fleatham bridge, Northumberland, August, 1859,' and writes respecting them,—'Although *Hippuris vulgaris*, Pondweeds, and Water Plantain, are growing not ten yards from it, I have my doubts about its being really wild. What makes me doubt is, that upon the bankside just at hand there are a bush or two of *Ribes Grossularia*, and some remains of masonry, as if there had been a garden there at some distant period. There are three or four patches of the *Althæa*.' It is not known as an indigenous plant of the Tyne province.

"*Vicia hybrida*, Smith. Mr. H. C. Watson sends a series of examples of the Glastonbury Tor plant, garden-grown, from seeds furnished by Mr. T. B. Flower.

"*Agrimonia odorata*, Mill. The Rev. W. H. Purchas sends specimens from Staunton Harold, Leicestershire. It is an addition to the Flora of the Trent province.

"*Rubus corylifolius*, Smith. Mr. John Barton sends an example collected with *Circæa alpina* in Glen Urquhart, a glen which runs into Loch Ness, fourteen miles south of the town of Inverness. This station is in the 15th or East Highland province of the 'Cybele:' the 13th, or West Lowland province, is its previously ascertained northern limit.

"*Lamium intermedium*, Fries. Through the courtesy of Mr. More, I have been favoured with a sight of the plant which has been reported under this name from the Isle of Wight (Phyt., o. s., vol. iii. p. 665). To me it appears to be simply a luxuriant form of *L. incisum*, and different to the true *L. intermedium* of Fries as found in several of the northern provinces.

"*Plantago arenaria*. Mr. H. C. Watson forwards an example of this species, and writes with it,—'*Plantago arenaria* is gathered

(or seen) in hundreds on the sandhills of the Somersetshire coast this year. I think that Mr. Clark, of Halesleigh, was the discoverer, and he thinks the species imported with Lucerne seeds.' It is a plant of southern Europe, extending northward to France (reaching to the western departments), Belgium, and the Rhineland.

"*Chenopodium Botrys*. Mr. W. Mudd forwards an example of this species from waste ground at Great Ayton, North Yorkshire. It was before met with as a garden weed at Camphill, North Yorkshire, by Mr. Hebblethwaite, who sends a supply, for distribution, of garden-grown specimens.

"*Festuca Pseudo-myurus*, var. *maritima*. From the coast sandhills of the Isle of Wight, Mr. More sends a series of specimens of a plant thus marked, and writes respecting it,—'This is what is called *uniglumis*, β , in 'Flora Vectensis;' but it clearly differs from that species in having no awn to its larger glume, and having the two glumes always present, and in the single stamen. But at the same time it differs a good deal from the ordinary *Pseudo-myurus* in its shorter, stouter habit, the usually purplish tinge of its panicle, and in the disproportion between the glumes, the smaller one being much shorter, sometimes nearly obsolete. In the proportion which the large glume bears to the included floret, our plant seems intermediate between *uniglumis* and *Pseudo-myurus*. The larger glume reaches somewhat less than one-third of the contiguous floret, and, except in the terminal spikelet, is four or five times as long as the smaller glume. There is, I believe (in the packet), about an equal number of specimens of the usual state of *Pseudo-myurus*, which I hope you will approve of sending out in each case for comparison with the variety.' Lloyd writes of the plant,—'It varies with the inferior glume very short, and on the borders of the sea with the superior glume obtuse (*F. ambigua*, Le Gall.)' I observe that in his last edition Mr. Babington give it as *F. Myurus*, Linn.

"*Briza maxima*. The Rev. A. M. Norman sends several specimens of this species, collected by himself, and marked, 'Naturalized at St. Aubin's, Jersey, July, 1859.'

"*Common Barley with a branched spike*. Mr. Watson sends, from a field in Surrey, a form of the common Barley with a branched spike. It grew amongst a crop of the ordinary simple spiked state."

FLEMING SOCIETY OF NATURAL SCIENCE.

SESSION IX., MEETING III.

The Society met in the New College, on Tuesday, 10th of January, at eight o'clock. John A. Stewart, Esq., in the Chair. The following papers were read:—

I. Ferns; their structure, propagation, development, culture, geographical distribution, uses, classification, and diseases: by Mr. W. Ramsay M'Nab, Librarian and Curator of Museum.—Mr. M'Nab, in his paper, which was a most elaborate one, touched at greater or less length on the various points enumerated in the title. While examining the difference between a seed and a spore, the author remarked, that in the seed the root came from a fixed point, but in the spore it did not. He took as an example of an ovule the ovule of *Nymphaea alba*. When the seed was sown, the root was produced from the same point in all the seeds of the *Nymphaea*; and that at a *diametrically opposite point* the stem or ascending axis was developed. This law he proposed to call the "Law of adverse directions"—a law which is never violated. He promulgated another law,—which is present only in *Phanerogameæ*,—that "The radicle is always produced from one fixed spot," viz. the micropyle. The author observed that although the spores of the *Cryptogameæ* were homogeneous in their structure, and the radicle descended from any point of the surface, the stem was always produced at the diametrically opposite point; while in the seed of *Phanerogameæ* the root came from a *fixed point*. *The part of the spore which was downward produced the root, and that which was upwards the stem*. The foregoing points constituted the greatest difference between the seed of a flowering and a flowerless plant,—the latter of which he proposed to call the "Law of spontaneous ascendance and descendance." The classification which Mr. M'Nab adopted was very little different from that of Mr. Babington (Man. of Bot.), but he had been principally engaged in examining the different tribes and genera. The principal difference was that he had divided some of the genera into subgenera, as for example:—In Tribe I., *Polypodiæ* of Bab., there were the following genera and subgenera:—1. *Allosorus*; 2. *Polypodium*, which he had divided into two, viz. *a. Polypodium verum*, *β. Pseudo-*

Polypodium; 3. *Gymnogramma*; 4. *Woodsia*. In Tribe II., *Aspidiæ* (Bab.), there were, 1. *Lastrea*, which he had divided into four, viz. *a. Lastrea palustris*, *β. Lastrea montana*, *γ. Lastrea vera*, *δ. Pseudo-Lastrea*; 2. *Polystichum*; 3. *Cycopteris*. In Tribe III., *Aspleniceæ* (Bab.), there were, 1. *Athyrium*; 2. *Asplenium*, which he had divided into two, viz. *a. Asplenium verum*, *β. Pseudasplenium*; 3. *Scolopendrium*. In Tribe IV., *Grammitidiæ* (Bab.), there was, 1. *Ceterach*, and so on for the other four tribes of Babington, in whose classification Mr. M'Nab concurred. In conclusion he noticed, after reviewing the whole subject of Pteridology, the ravages of snails and the *Otiorrhynchus sulcatus*, and the effects of shot, and of Fungi on Ferns. The paper was illustrated by a large collection of British and Foreign Ferns, a large number of beautiful coloured diagrams, microscopic preparations, and dissections, etc.

II. Notice of the third occurrence of *Scymnus borealis* (Flem.) off the Scottish coast, by Mr. Robert Brown. (The paper will be published at length.)

Remarks were made on both papers by the President, and Messrs. Sadler, Burns, Thomson, Brown, and Kay. The Society then adjourned to private business, when Messrs. Crossby and M'Millan, M.A., were elected members; Mr. Robert Brown was elected Treasurer *vice* Mr. M. M'Donald, who goes out of office by rotation. The Secretary's and Treasurer's reports, etc., were laid before the Society, when the next meeting was fixed for the 24th of January.

BOTANICAL NOTES, NOTICES, AND QUERIES.

PLANTS USED BY MONKS AS FOOD.

In one of the numbers of the 'Phytologist' for last year, an article was published upon Cockle bread and beech-leaves forming part of the food of the monks of the Wormwood Valley, in early times. I think some of your readers may like to know that in the Golden Legend it is said of St. Bernard, Abbot of Clairvaux, "that he often made his pottage with leaves of *Holm*." Now if we are to understand *Holm* to be the plant that was, and still is, called *Holly*, I wish to know what particular virtues, dietetic, medicinal, or otherwise, the leaves thereof possessed, or were supposed to possess, in St. Bernard's time. Some writers tell us that the bark of the *Holly* contains a viscid juice from which birdlime is made, and for

ought I know, the leaves may contain a mucilage very agreeable in pottage (like other pot-herbs, including Herb-John), but unless they are well pounded and boiled, I think the prickles might be somewhat unpleasant to the stomach. I have an impression that in early times the *Elm* was called *Holm*; if so, the leaves of this tree might have been those which the Abbot of Clairvaux used. Sir J. Mandeville says of the monks of Mount Sinai "That they drink ne wine but zif it be on principale festes, and they lyven porely and symply with joutes and with dates" (Voy. p. 71). The metrical receipt in 'Liber Cure Cocorum,' Sloane MS., 1986, p. 97, gives a list of pot-herbs for compounding joutes,—“Cole, borage, persyl, plumtre leves, red nettell crop, malves grene, red brere cropps, avens, violet, and pymrol.” These were to be ground in a mortar and boiled in broth.

S. B.

LONG-PURPLES OF SHAKSPEARE.

E. M. A., in the 'Phytologist' for December, 1859, says he never heard of "Long-Purples" in any part of England, and he asks, "May not the *Lythrum Salicaria* be the true plant, as it is very common in Warwickshire, and answers the name much better than any sort of Orchis?" If E. M. A. will refer to the passage in 'Hamlet' in which the Long-Purples is mentioned as forming a part of Ophelia's garland, he will find that Shakspeare defines the plant by saying that 'liberal shepherds called it by a grosser name,' and that 'cold maids did Dead Men's Fingers call them.' I am not aware that the *Lythrum Salicaria* has any common names which would agree with those belonging to Long-Purples, but I do know that the latter has some other names which may be properly called gross, and which are given by our early writers on plants.

I believe also that the *Lythrum Salicaria* blossoms late in summer, and would not be found in bloom with other flowers named in the garland of Ophelia. I think also that its colour is not strictly a purple, so much as the early Purple Orchis is.

Will E. M. A. be kind enough to inform us whether any one of the Orchis tribe is called Dead Men's Fingers, in Warwickshire, or if he ever heard the *Arum maculatum* called by these names or by the name of Long-Purples?

S. B.

HONEY-STALKS.

In 'Titus Andronicus,' act iv. sc. 4, Tamora says:—

"I will enchant the old Andronicus
With words more sweet and yet more dangerous
Than baits to fish or Honey-stalks to sheep;
When as the one is wounded with the bait,
The other rotted with delicious feed."

What plant is here meant by Honey-stalks?

S. B.

GOLD-FLOWERS. *

With reference to your article on these flowers in the 'Phytologist' of September last, I beg to give you the following, taken from the 'Promptorium Parvulorum':—"Goolde Herbe. *Solsequium*, quia sequitur solem; *Elitropium*, *Calendula*."

A note by the editor (Albert Way) is as follows :—

“The plant here intended is perhaps the Corn Marigold, *Chrysanthemum segetum*, Linn., called in the north Goulans, Guilde, or Goles, and in the south, Golds. See Ray and Jamieson.’ Dr. Turner says that ‘*Ranunculus* is called in English Crowfoot, or Kingerix, or in some places a Gollande’ (Herball, Part 2). Nares states that *Gold* is the *Cudweed*, or Mothwort, *Gnaphalium germanicum*, Linn.”

Would our kind friend the Editor inform us whether the plant called Goolde in the ‘Promptorium’ aforesaid is not intended for the Marigold, the *Chrysanthemum Coronarium*, which is truly “a sun-loving flower ;” also whether he ever heard the *Cudweed* called ‘Gold’?

Robert Turner, in his ‘British Plants,’ says one of the names of Cudweed is *Albinum*, from its whiteness, and it is called *Herba impia* by Pliny.

NAMES OF PLANTS.

It was not poverty of imagination, but the reverse, that was exemplified in the blending together the representative signs of the Fauna and Flora of any country and by any people. It was an exuberant imagination and a poverty of invention that produced this result. The few radical words expressive of the zoology, have to perform the same office for the botany of a nation ; or in other words, to do double duty—to serve as representatives both of the animal and vegetable kingdom. PHILOLOGUS.

Can you tell me what is generally supposed to be the Mustard-plant of the New Testament ?

Again,—Are there many examples of wild plants producing double flowers? *Cardamine pratensis* does occasionally (frequently?). It appears to be plentiful in a meadow a mile south of Martinsell, Pewsey, Wilts. F.T.R.

CHENOPODIUM BONUS-HENRICUS, MERCURY, GOOSE-FOOT, OR GOOD KING HENRY.

A correspondent wishes to know when and from cause this plant obtained the name of Good King Henry? and whether it was not called Blite, or *Blitum hortense*, and *Blitum Bonus-Henricus*?

WELDILLONE.

In a copy of the ‘Practica’ of John Arderne (Sloane MS. 56, p. 3) are some names of plants in French and English, among which occurs “*Weldillone*, i.e. Edgrove.” What plant is this, and what other name has it?

S. B.

Communications have been received from

George Jordan ; A. G. More ; Sidney Beisly ; John Sim ; Rev. T. F. Ravenshaw ; E. Edwards ; H. Trimen ; C. C. Babington ; W. P. ; S. B. ; Al. Kay ; Arch. Jerdan.

BOOKS RECEIVED FOR REVIEW.

The Critic ; four numbers, etc.

BOTANY OF THE BREADALBANE MOUNTAINS.

One Day's Botanizing on the Breadalbane Mountains in the Summer of 1859. By JAMES BACKHOUSE, Jun.

Leaving our quarters at an early hour, we pursued our course for many miles, slowly ascending towards a great range of crags which, though gloomy enough in general aspect, looked promising in a botanical point of view. It was evident that our sojourn was to be among the clouds, and that cold and wet were to be our portion for the day; but all this was calculated for in advance. Two compasses, a plentiful supply of provisions, and thorough equipment in light Mackintosh apparel, made us all but totally indifferent as to what kind of weather was in store. The "ground" was new to both of us, and we had planned a course that neither guide-books nor maps could materially assist us in, so far as the *detail* of the journey was concerned.

On reaching the cliffs, we found them abundantly carpeted over with *Silene acaulis* and *Saxifraga oppositifolia*, intermingled with tufts of *Poa alpina* and *P. cæsia*, *Potentilla alpestris*, *Alchemilla alpina*, *Thalictrum alpinum*, *Galium montanum*?, and here and there waving tufts of the handsome *Carex atrata*. Skirting the base we saw abundance of *Saxifraga aizoides*, and a few tufts of *Woodsia alpina*. *Polystichum Lonchitis* was abundant, and *Asplenium viride* and *A. Trichomanes* not unfrequent. Portions of the cliff produced *Salix reticulata* and *S. lapponica*, along with *Vaccinium uliginosum*, *Vicia sylvatica*, *Saussurea alpina*, and *Saxifraga nivalis*. A few *Hieracia* were met with, viz. *H. anglicum* and its var. *amplexicaule* (the "*H. cerinthoides*" of my 'Monograph of British Hieracia'), *H. prenanthoides*, and *H. lingulatum*. Once or twice we gathered the exquisite *Veronica saxatilis*, still in bloom. Continuing our course, we found *Dryas octopetala*, and a profusion of *Cerastium alpinum* (which, with *Sax. oppositifolia* and *Silene acaulis*, may be said to cover acres with scattered tufts, as they form a material portion of the herbage for miles together in positions at all favouring their growth). *Arctostaphylos Uva-ursi* was also abundant, together with *Saxifraga hypnoides*. Ascending higher, we encountered several plants of *Juncus castaneus*, *J. biglumis*, and *J. triglumis*; and found vast sheets of *Carex pulla*, *C. curta*, and *C. rigida*,

interspersed here and there with *C. capillaris* and *Draba incana*. *Sagina saxatilis* was common on barren spots which had been recently covered with snow. As we climbed still higher and higher, steering amidst the clouds, we met with *Veronica humifusa* in abundance; also *Sibbaldia procumbens*, *Salix herbacea*, *Aira alpina*, and a profusion of *Saxifraga nivalis*. On the highest ledges were *Draba confusa* and *Luzula spicata*. Except an occasional glimpse, we were enveloped in cloud all the day, and only escaped from it by descending to a lower level in the evening.

On another occasion, a few days subsequently, we had the satisfaction of finding what might truly be called "the home" of *Woodsia alpina*. Just think of luxuriating in the sight of tufts bearing sixty-five, eighty, and even one hundred fronds, from two to four inches high. On one ledge of rock I counted seven tufts, all visible without moving a step. Some are difficult to reach, and even dangerous. One most luxuriant tuft of (apparently) forty to fifty-five fronds remains in a conspicuous position, quite near enough to show its true character, but guarded by crags that threaten almost certain destruction to any one who dares to attempt to touch it!

No one who has seen the true *W. alpina* growing in the profusion which we did, would doubt its entire distinctness from *W. ilvensis*: the erect, dense tufts of silvery-green, narrow fronds of the former are very diverse, both in habit and appearance, from those of the latter, of which we found a few days afterwards fourteen plants, in less than an hour, in the Dumfries-shire mountains.

On Ben Lawers we were rewarded, as all who venture to scale its high crags and broken, silvery-looking, micaceous ravines, will be, with the beauteous tufts of *Myosotis alpestris*, whose dense clusters of deep-blue flowers throw into the shade the charms of all our other native "Forget-me-nots." Near the summit we saw many scores of plants of *Saxifraga cernua*, some of which were three inches high, but none in blossom, and several specimens of *Draba rupestris*. We also saw lower down (on the crags) *Gentiana nivalis* several times, hundreds of tufts of *Arenaria rubella*, and one plant of *Erigeron alpinus*. On less elevated parts, *Pseudathyrium alpestre* was the common Fern, associated with *Polystichum Lonchitis* of unusual size. The

rills were gay with the pink-flowered *Sedum villosum*. In several places we saw a *Cerastium* allied to *C. alpinum*, but evidently distinct, and as clearly distinct from *C. latifolium*.

Respecting this plant I hope to send a more minute account at a future time, believing it to be an undescribed species.

Hieracium chrysanthum occurs sparingly on some parts of the Ben Lawers range, and we found a single plant of the orange-flowered *Sax. aizoides*, var. *autumnalis*. In Glen Lochay we noticed *Carex Persoonii* and *Bartsia alpina*, in addition to other plants noticed before. In Glen Dochart we saw *Hieracium holosericeum*, and once met with *Azalea procumbens*. A small loch at the foot of Ben Mohr produced *Nuphar minima* and *Sparganium natans*.

CHAPTERS ON FUNGI.

By ARCHIBALD JERDON.

CHAPTER IV.

I shall now proceed to give the names and descriptions of some of the common species of Fungi which are found in this country, in order to illustrate the various suborders into which, as we have seen, they are divided.

1. AGARICINI.

Beginning with the higher Fungi, we have first the suborder *Agaricini*, in which the hymenium or fructifying surface consists of lamellæ, or gills. The plants of this division are familiar to almost every one by the names of Mushrooms, Toadstools, etc., and may be considered as the vulgar type of the whole class of Fungi. The number of species is very great, nearly four hundred having been found in this country alone, and they occur almost everywhere, chiefly in autumn.

The principal genus of the suborder is the large and extensive one of *Agaricus*, of which the following generic character is given in Hooker's 'English Flora' (which I shall take as my text-book, being the latest systematic work on British Fungi).

AGARICUS.

"Hymenium consisting of plates radiating from a common

centre, with shorter ones in the interstices, composed of a double closely connected membrane, more or less distinct from the pileus. Veil various or none."

The genus is divided into several sections, distinguished by the colour of the spores and the texture of the veil, and is also divided into a number of subgenera, many of which are now ranked as genera. I select the following species as illustrations:—

AGARICUS (AMANITA) MUSCARIUS, L. *Fly Agaric*. Margin of the pileus striate; gills white; stem subsolid, bulbous; volva scaly.

Woods, especially of Fir and Birch; Aug.—Nov.

Pileus 3–7 inches broad, convex, rich orange-scarlet, beset with conical angular whitish warts. Gills white, broad, free or slightly adnexed. Spores white. Stem 4–9 inches high, $\frac{1}{2}$ –1 inch thick, bulbous at the base, the bulb covered with close conical scales. Ring deflexed.

A well-marked and beautiful species, common in Fir-woods, which it enlivens with its brilliant red pileus. It possesses, however, highly narcotic and dangerous qualities.

AGARICUS (ARMILLARIA) MELLEUS, Vahl. *Black-scaled Agaric*. Tufted; pileus dirty-yellow, rough with black hairy scales; gills distant, adnato-decurrent; stem fibrillose; ring tumid, patent.

On stumps of trees, etc., Sept.—Oct.

Densely tufted. Pileus 2–7 inches broad, at first convex, then expanded, dirty-yellow, brownish-yellow or reddish, rough with reflexed scales, especially towards the centre; scales at first yellow, but becoming dark-brown. Gills distant, adnato-decurrent, from whitish becoming flesh-coloured or reddish. Spores white. Stem 2–8 inches high, yellowish or reddish, when old often variously tinted with blue, grey, etc., firm and elastic, solid. Ring large, thick, spreading, yellow, whitish within.

A very common Agaric in some seasons, on stumps of trees, which it sometimes so completely covers as to hide. The spores are produced in abundance, and the lower pilei of a tuft are often whitened by them, as if dusted with flour.

AGARICUS (RUSSULA) EMETICUS, Schæff. *Common simple-gilled Agaric*. Large, compact, margin of the pileus at length furrowed; gills broad, mostly equal, white.

Woods. July–Dec., very common.

Pileus 2–5 inches broad, smooth, hemispherical, at length plane and depressed in the centre, of various colours, but generally purple or rose-red; margin thin, striato-sulcate. Gills rather distant, broad, rigid, thickish, equal, with a very few small ones interspersed. Spores white. Stem 2–3 inches high, solid, firm but brittle, white, or tinged with the colour of the pileus.

A common species in Fir or other woods, in early autumn. Very acrid and poisonous, but much relished by snails; indeed, it is rarely allowed to attain maturity, owing to these mollusks. The pileus varies much in colour, and is sometimes even white.

AGARICUS (GALORRHEUS) SUBDULCIS, Bull. *Subacrid milky Agaric*. Subacrid; pileus smooth, polished, dry, rufescent; gills flesh-colour, at length ferruginous; milk-white, unchangeable; stem smooth, at length hollow.

Woods, Sept.–Oct.

Pileus 1–4 inches broad, dark-chocolate, sometimes slightly viscid when young, at first somewhat convex, becoming depressed and hollow in the centre. Milk-white, acrid when the plant is old. Gills decurrent, at length deep red-brown. Spores white. Stem 1–2 inches high, $\frac{1}{4}$ – $\frac{1}{2}$ inch thick, somewhat spongy within, at length hollow.

One of the milky Agarics, the whole plant abounding in a milky juice, which exudes when it is cut or broken in any way. This milk is often highly acrid, but one species, *A. deliciosus*, is edible, and much esteemed in some countries.

AGARICUS (CLITOCYBE) COCCINEUS, Wulf. *Changeable scarlet Agaric*. Pileus convex, expanded, viscid, at length depressed; gills adnate, with a decurrent tooth, connected, changing colour; stem compressed, scarlet.

Pastures and grassy uplands, Sept.–Oct.; common.

Pileus 1–2 inches broad, at first conico-campanulate, at length expanded and inverted, sometimes umbonate, splitting in a radiate manner, yellow, orange, or scarlet, becoming buffish in old-age. Gills broad, ventricose, wrinkled, thick, connected by veins, much paler than the pileus and with a glaucous bloom. Spores white. Stem $1\frac{1}{2}$ inch high, $\frac{1}{2}$ inch thick, more or less hollow, smooth, tough, but easily splitting longitudinally.

An abundant species in some localities, and very beautiful in

its young state. I have seen grassy hillsides covered with it in October.

AGARICUS (MYCENA) CORTICOLA, Bull. *Bark Agaric*. Small; pileus thin, hemispherical, then umbilicate, striate; gills uncinato-decurrent; stem minutely pulverulent, short, incurved.

Trunks of trees, dead bark, etc.; winter.

Pileus 1-3 lines broad, hemispherical, generally obtuse, brownish, cinereous, reddish, etc. etc. Gills subdecurrent, paler than the pileus. Spores white. Stem $\frac{1}{2}$ -1 inch high, incurved, minutely pulverulent, whitish.

A pretty little species, common on trunks of living trees, on rugged parts of the bark. It varies much in colour, but is generally of a reddish-brown or cinereous hue. It is only to be seen in perfection in moist weather, as it dries up and becomes almost invisible in fine weather and sunshine.

AGARICUS (CLITOPILUS) PRUNULUS, Scop. *Monoceron*. Pileus compact, flattish, white; gills white, then flesh-coloured.

Woods and pastures, June-Oct.; common.

Pileus 2-4 inches broad, subrepand, convex at first, at length plane or subdepressed, white, shining, but minutely tomentose, margin involute. Gill narrow, decurrent, more or less forked. Spores pale rose-coloured. Stem short, white, solid, thickest at the base, and downy.

Not uncommon in grassy woods. Smell strong, like that of fresh meal. Edible, and much esteemed on the Continent, but it rarely occurs here in sufficient abundance to render it an article of food.

AGARICUS (PHOLIOTA) SQUARROSUS, Müll. *Squarrose Agaric*. Cæspitose; pileus fleshy, dry, bright ferruginous-saffron; scales close, revolute; gills pallid-olive, then ferruginous; stem squarrose, attenuated below.

On stumps of trees, Aug.-Dec.; not uncommon.

Densely tufted. Pileus 2-5 inches broad, firm, convex, expanded, obtusely umbonate, yellow, clothed with rich-brownish scales. Gills rounded behind, and adnate or subdecurrent. Spores ferruginous. Stem 3-7 inches high, $\frac{1}{2}$ -1 inch thick, at first pale then croceo-ferruginous, solid, equal or attenuated at the base, covered with reflexed scales (as in the pileus) below the ring, above the ring pale-yellow and smooth. Ring near the top of the stem, reddish-brown externally.

A handsome Agaric, not uncommon on stumps of trees, in autumn. It is well figured by Greville in his 'Scottish Cryptogamic Flora.'

AGARICUS (HYPHOLOMA) FASCICULARIS, Huds. *Smaller fasciculate Agaric*. Pileus subcarnose, umbonate, ochraceous; gills at length green; stem hollow, slender.

Roots of trees, gateposts, etc. etc., April to November; very common.

Gregarious, and densely tufted. Pileus 2 inches broad, at first conic then expanded, tawny or yellow, with an orange centre. Gills adnate, at first yellowish, becoming pale-green, and finally purplish from the spores. Spores purplish-brown. Stem 2-9 inches high, 2 lines thick, curved and unequal, hollow, yellow. Veil woven, fugacious.

A very common species, growing on decaying wood almost everywhere. Often very beautiful from its bright yellow or orange pileus and pale-green gills. Taste bitter and nauseous.

AGARICUS (COPRINUS) MICACEUS, Bull. *Mica Agaric*. Cæs-pitose; pileus membranaceous, sulcate, squamuloso-furfuraceous; gills pale, then black; stem equal, slender.

Roots of trees, bottoms of posts, etc., May-November; very common.

Tufted. Pileus $\frac{3}{4}$ -1 inch or more broad, campanulate or semi-ovate, at length expanded and inverted, reddish-ochre, sprinkled with glittering particles, strongly striate. Gills broad behind and adnate, from white becoming purplish-black. Spores brownish-purple, almost black. Stem 2-3 inches high, 2 lines thick, hollow, brittle, slightly pulverulent, but shining, as if varnished.

A very common Agaric about the roots of trees, etc. Remarkable from the glittering atoms with which the pileus is besprinkled, though these are not always very evident. In decay the pileus turns up and becomes purplish, like the gills, and the whole melts into a soft blackish mass.

The only other genus of this suborder I shall notice is *Cantharellus*, the character of which is as follows:—

CANTHARELLUS.

Pileus furnished below with dichotomous, radiating, branched, subparallel folds, not separable from the flesh, sometimes anastomosing, or obsolete.

There are about a dozen British species of this genus, and of these the most common is the following, viz. :—

CANTHARELLUS CIBARIUS, Fr. *Common Chantarelle*. Buff-yellow; pileus fleshy, subrepand, smooth; folds tumid; stem solid, attenuated downwards.

Woods, summer and autumn; common.

Subgregarious. Pileus 1–4 inches broad, firm, variously lobed, depressed in the centre when mature, of a rich yolk-of-egg-yellow, paler when dry; flesh-white or yellowish-white. Folds forked, thick, fleshy, decurrent. Spores white. Stem 1–2 inches high, $\frac{3}{4}$ – $\frac{1}{2}$ inch thick, smooth, tough, yellow, diffused into the pileus.

A well-marked species, distinguished also by its odour, which is very agreeable, and strongly resembles that of ripe Apricots. It is esculent, and is much used in some parts of the Continent as an article of food. It is, however, rather tough, and requires to be cooked for a long time to render it palatable, and even then it has not much flavour compared with some other Fungi.

2. *POLYPOREI*.

In this suborder the fructifying surface is composed of pores or tubes, generally occupying the under side of a pileus, but sometimes resupinate, and without a pileus at all.

The principal genus is *Polyporus*, which contains a considerable number of British species. Its character is as follows :—

POLYPORUS.

Hymenium concrete with the substance of the pileus, consisting of subrotund pores, with thin simple dissepiments. I select the following species as illustrative of the genus :—

POLYPORUS SQUAMOSUS, Huds. *Large scaly Polyporus*. Broad; pileus of a tough elastic fleshy substance, clothed with darker scales; pores pale; stem blunt, sublateral.

Decayed trunks of trees, stumps, etc., summer and early autumn; very common.

Solitary or imbricated. Pileus pale-ochraceous, with scattered brown adpressed scales. Pores large, angular, yellowish-white. Spores very small, oblong, white. Stem short, thick, generally black at the base.

A common but handsome species, often growing in hollow trees. It sometimes attains a very large size, and is said by

Greville (by whom it is beautifully figured) to be the largest of British Fungi.

POLYPORUS BETULINUS, Bull. *Birch-tree Polyporus*. Pileus fleshy, smooth, pale reddish-brown, furnished with a very short obliquely vertical obsolete stem; pores unequal, white.

In trunks of dead Birch-trees, summer and autumn; common.

Pileus 4-6 inches across, roundish or subreniform, generally almost sessile. Flesh pure-white, thick. Pores white, or tinged with brown, narrow. Spores white, very small, oblong.

A common Fungus on dead Birches. The flesh is sometimes used for strops for razors, for which purpose it is well adapted. When dry the whole plant is very light.

POLYPORUS VERSICOLOR, L. *Party-coloured Polyporus*. Pilei coriaceous, villous, adorned with various coloured zones, more or less shaded with blue; pores round, white.

On trunks of trees, posts, sticks, etc.; extremely common.

Generally dimidiate and densely imbricated, stemless, marked with regular concentric shining zones of various colours, principally shades of blue and brown. Pores short. Spores very small, white, oblong.

A very common and variable species on decaying wood. Sometimes the pileus is entirely of an ochry-brown, with darker zones.

I shall notice another genus of this suborder, viz. *Boletus*, many species of which are common Fungi.

BOLETUS.

Hymenium distinct from the substance of the pileus, consisting of cylindric separable tubes.

BOLETUS GREVILLEI, Kl. *Bright-yellow Boletus*. Pileus compact, bright-yellow, clothed with brown gluten, which gradually disappears; tubes decurrent, of a golden-sulphur colour; stem firm, furnished with a ring, above which it is reticulated.

Woods, heaths, etc. May-Oct.; common.

Pileus 2-5 inches broad, generally bright-yellow and glutinous, becoming dry. Tubes unequal, wavy, sometimes with their orifices reddish. Ring dirty-yellow, disappearing in old-age. Spores minute, dull pale-ochraceous. Stem 2-3 inches high, 6-9 lines thick, yellow spotted with reddish, thickened at the base.

A common *Boletus*, especially in plantations of Larch. It is

one of the first Funguses that appear after the heat of summer is over.

BOLETUS LURIDUS, Schæff. *Poisonous Boletus*. Pileus pulvinate, subtomentose, olive; tubes nearly free, round, yellow, their orifices crimson-red; stem thick, more or less marked or reticulated with crimson-red.

Woods, summer and autumn; common.

Pileus 2–6 inches broad, convex, expanded, smooth to the naked eye, olive or ferruginous-brown. Flesh yellow, changing to blue when broken. Tubes free, yellow, also changing to blue when broken or separated, their orifices red or orange, round. Spores elliptic, olivaceous-ochre. Stem thick, bulbous, variegated with red and shades of yellow.

A handsome species, but possessing very deleterious properties, and therefore to be avoided. The crimson or orange surface presented by the tubes is beautiful, and the changing of the colour of the flesh and tubes to blue is very curious. The colour of the pileus varies to brick-red, pinkish, or cream-coloured.

BOLETUS SCABER, Bull. *Scurfy Boletus*. Pileus pulvinate; tubes free, round, white; stem firm, attenuated, rough with scurfy scales.

Woods, summer and autumn; very common.

Pileus 3–7 inches broad, viscid when moist, very variable in colour, but generally cinereous-brown, olive, or orange, smooth or minutely downy. Flesh thick and soft. Tubes generally of a greyish-buff colour, their orifices often ferruginous when young. Spores subfusiform, brownish-ochre. Stem 6 inches or more high, attenuated upwards, squamose with black or orange scales, often marked with longitudinal coarse raised lines (of black).

A common but variable Boletus, well marked, however, by its rough stem. It is said by Dr. Badham to be edible.

3. *HYDNEI*.

The Fungi of this suborder have their hymenium clothed with prickles or spines, which vary in being sharp or obtuse. I shall notice two genera, *Hydnum* and *Radulum*.

HYDNUM.

Hymenium of the same substance as the pileus, composed of free spine-like processes.

HYDNUM REPANDUM, L. *Common Hydnum*. Pileus fleshy,

subrepand, smooth, zoneless; spines unequal, pale, as well as the irregular stem.

Woods, autumn; common.

Subgregarious. Pileus 2–4 inches broad, irregular in form, and often excentric, more or less lobed, buffish or subrufescent, smooth, or sometimes tomentose. Spines unequal, conical, entire, or sometimes bifid, or laciniated. Stem $1\frac{1}{2}$ –3 inches high, 1 inch thick, solid, paler than the pileus, sometimes sublateral.

Not rare, but seldom occurring in any abundance. It is edible, and highly esteemed in some countries.

RADULUM.

Hymenium tuberculated. Tubercles shapeless, resembling papillæ, or rude, somewhat angular spines, more or less obtuse, distant, distinct, or irregularly fasciculate, the inner substance homogeneous with the receptacle.

RADULUM ORBICULARE, Fr. *Circular Radulum*. Effused, orbicular; margin byssoid, yellowish-white; tubercles shapeless, somewhat elongated and fasciculate.

On dead Birch-trees, and also on wild Cherry, etc.; autumn to spring.

Very variable, resupinate; 2–3 inches broad. Margin byssoid, yellowish in the centre, becoming white at the circumference. Tubercles irregular, tooth-like, obtuse, longish, often fasciculate, and sometimes tomentose at the apices.

A pretty and curious Fungus, generally found on decaying Birch-trees.

4. AURICULARINI.

This suborder is characterized by the fructifying surface being *even*, i. e. without folds, tubes, prickles, etc. It contains a large number of species, many of which are found in this country. I shall take the old genus *Thelephora*, which is now split into many others, as the type of the Order.

THELEPHORA.

Hymenium homogeneous, and concrete with the pileus, even or papillate, the whole surface bearing spores.

THELEPHORA HIRSUTA, Willd. *Common Thelephora*. Effuso-reflexed, coriaceous, strigose; beneath smooth, even, buff.

On sticks, pales, fallen trees, etc. Perennial; very common.

Very variable, at first resupinate, at length generally reflexed, often imbricated. Pileus more or less zoned, strigose, tough, buff, yellowish, or greenish. Hymenium smooth, buff (often with a purplish shade), sometimes cinereous. Spores small, whitish, oval-oblong.

A common species, particularly on dead Oak and Birch. In its young state, of a beautiful orange-buff colour.

THELEPHORA SANGUINOLENTA, A. and S. *Silky blood-stained Thelephora*. Dimidiate or reflexed, blood-coloured when bruised, silky, pale; beneath smooth, greyish-brown.

On dead Firs and Larches, etc.; common; perennial.

At first resupinate and circular, at length dimidiate or reflexed, silky or almost strigose, zoned, pale-brownish. Hymenium smooth, greyish-brown, becoming blood-red (or rather, giving forth a blood-red juice) when scratched or bruised.

Remarkable for the property it has (in common with some other species) of becoming bloody when touched.

THELEPHORA COMEDENS, Nees. *Immersed Thelephora*. Effused, growing beneath the bark of trees, at length bursting forth, thin, smooth, yellowish flesh-colour, even, at length cracked.

On dry decayed branches of various trees; very common.

Distinguishable by its peculiar mode of growth. It originates beneath the bark, which gradually peels off, and leaves it exposed, forming a revolute margin to it.

A very common *Thelephora*, especially on branches of Oak, and often extending 2 or 3 feet in length. It is only seen in perfection in moist weather, as it withers and dries up in dry.

5. *CLAVARIEI*.

Fungi clavate, or variously branched, rarely lobed or gelatinous. A small suborder, containing those Hymenomycetous Fungi which are more or less club-shaped, or branched. The principal genus is *Clavaria*, the character of which is as follows:—

CLAVARIA.

Receptacle erect, more or less cylindrical, homogeneous, confluent with the stem. Hymenium occupying the whole surface.

CLAVARIA PRATENSIS, Pers. *Meadow Clavaria*. Tufted, yellow, stem slender; branches short, geniculate, divaricate; branchlets obtuse, subfastigate.

Meadows and woods; common. Oct.—Nov.

Distinguished by its fastigiate mode of growth. Its colour is an ochry-yellow, more or less bright, and the whole plant resembles the horn of a stag.

CLAVARIA VERMICULARIS, Sw. *Worm-like Clavaria*. Simple, pure-white, tufted, crowded, subulate, flexuous, solid, but with a small perforation, mostly connected at the base.

Lawns and pastures, autumn; common, especially after rain.

Forming white worm-like tufts about 2 or 3 inches high.

I notice also the genus *Typhula*.

TYPHULA.

Receptacle somewhat cylindrical, distinct from the capillary stem.

TYPHULA ERYTHROPUS, Pers. *Red-stemmed Typhula*. Simple; receptacle smooth, white; stem dark-red.

On various decaying substances, as twigs, leaf-stalks, etc. etc. Not uncommon.

Often growing on some species of *Sclerotium*, and thus apparently having a tuberous root 3 lines to 1 inch high; stem often flexuous, longer than the receptacle, which is pure-white.

A pretty little Fungus, but requiring to be sought for among dead leaves and twigs. The dark-red stem contrasts well with the white summit or receptacle.

Several of the genera classed with *Clavaria*, etc., in the 'English Flora,' have now been removed to the Order *Ascomycetes*, as their fructification is sporidiiferous.

6. TREMELLINI.

Fungi lobed, convolute or disciform, gelatinous; fertile threads not compacted into an hymenium.

The plants of this suborder are chiefly distinguished by their *gelatinous* substance. They often form rounded or shapeless masses of a jelly-like consistence, swelling with moisture, and shrinking up in dry weather. I select the following examples:—

TREMELLA.

Receptacle gelatinous, homogeneous, bearing fruit all round, destitute of papillæ.

TREMELLA MESENERICA, Retz. *Orange Tremella*. Rather tough, twisted, lobed and plicate, orange-yellow.

On dead branches, sticks, etc., all the year; common.

Varying a good deal in size and form, but generally strongly lobed and plicate, of a beautiful orange-yellow, pellucid when moist.

A common Fungus, especially on dead stems of Furze.

EXIDIA.

Receptacle gelatinous, homogeneous, covered above only with the papillate hymenium. Papillæ obscure in some species.

EXIDIA GLANDULOSA, Bull. *Witches' Butter*. Effused, more or less plane, thick, undulated, at length black; hymenium beset with conical spicules; beneath cinereous, subtomentose.

On trunks and branches of trees, especially Ash. Autumn and winter; common.

Generally somewhat turbinate and much wrinkled above; beneath rough like crape. At first generally clear-brown, becoming black in old-age. Substance tender but firm. Spicules not always present.

A curious Fungus, often occurring on fallen branches of various trees. It may be easily recognized by the above characters.

DACRYMYCES.

Receptacle gelatinous, homogeneous, filled within with sub-erect flocci and inspersed spores.

DACRYMYCES STILLATUS, Nees. *Common Dacrymyces*. Roundish-convex, at length plicate, yellow, then orange.

On wood, especially of Fir; frequent, the whole year, but chiefly in winter and spring.

Forming little round masses, from 1 to 2 lines broad, of a yellowish or orange colour, and growing in clusters.

A common plant on old paling, gateposts, etc. etc., shrivelling up in dry weather.

Mossburnford, Jan. 7, 1860.

ON THE TRANSMUTATION OF CEREALS.

A correspondent requests the publication of the following extract on the Transmutation of Cereals, from the 'Cottage Gardener,' January 3rd, 1860, p. 216.

"Columella, the Roman agricultural writer, says (after speaking

of the mode of cultivating barley), 'In like manner is the sowing of the oat, which sown in autumn is partly cut for hay or fodder whilst yet green, and partly it is protected for seed' (lib. ii. cap. xi.).

"Although only that one of the professed Roman agricultural writers mentions the oat, yet there are others of their authors who specially mention it, though not in commendation. Virgil twice speaks of 'steriles avenæ,' Eclogue v. 37; Georgic i. 154. Again, in the same Georgic, line 226, Virgil says, 'The expected crop has disappointed them by yielding barren oats' (*vanis elusit avenis*), alluding seemingly to an opinion entertained by the Romans, and by Theophrastus at an earlier period, that the oat is diseased wheat. Pliny says the oat 'is the chief deformity of all wheat, and barley also degenerates into it, so much so indeed that it has superseded wheat, and the people of Germany sow it and make porridge of it alone' (xviii. 17).

"That one species of the *Gramineæ* will take various forms according as its culture is varied, can be sustained by many evidences. M. Fabre* and others have improved *Ægilops triticoides* by culture until it became wheat: and Mr. Morton, author of the 'Cyclopædia of Agriculture,' obtained both Potato and Tartarian Oats after five or six years' cultivation from *Avena fatua*.

"As it is possible to create, by cultivation, our corn plants from inferior grasses, so we have evidence that those plants may be transmuted still further.

"Gerarde, an irreproachable witness, saw oats and wheat growing in the same ear. A gentleman told Dr. Lindley that in Germany oats sown early and not allowed to produce ears the first year, were found in the second year to yield other sorts of corn. In 1843, the Marquis of Bristol tried the experiment. Oats were sown and their stems continually stopped; and in 1844 some produced a slender kind of barley, a few yielded wheat, and some still produced oats. (Gardeners' Chronicle, 1844, p. 555).

"In 1800, Dr. Anderson quoted an instance of a Dutchman who cut his oats while green three times, and that when they were allowed to seed they produced rye (Recreations, ii. 779). Similar changes are recorded in 1837 (Loudon's Mag. of Nat. History); and Dr. Weisenborn, who repeatedly tried the experiment, adds, 'Let any one sow the oats at the latter end of June, and the transformation will certainly occur.'"

ADDITIONAL LOCALITIES OF SOME RARE HAMPSHIRE PLANTS.

Derived chiefly from Specimens preserved in the Herbarium of the late Dr. Bromfield. By A. G. MORE, F.L.S.

While lately engaged in arranging the Collection of Plants presented by Miss Bromfield to the Ryde Philosophical Society, I found that it contained specimens from several localities not mentioned in Dr. Bromfield's 'Catalogue,' as well as a few species which he had discovered subsequently to the date of his writing; and although some of the stations have been already published, it has seemed to me that they are deserving of a separate notice, as being both interesting in themselves, and as recalling a name so well known and respected as that of Dr. Bromfield. It is almost needless to add that the references are to the third volume of the old series of the 'Phytologist.'

Turritis glabra (p. 208). Sandy hedgebank at Kingsley, between Petersfield and Farnham; sparingly. * June 19th, 1850. W. A. B. spec.

Erysimum cheiranthoides. Sandy cultivated field at Passfield Common, on Wolmer Forest: one specimen only found. Aug. 29th, 1849. W. A. B. spec.

Viola canina (*flavicornis*, Sm.). Sandhills at the south-west end of Hayling Island. May 17th, 1850. W. A. B. spec.

Arenaria tenuifolia. In a clover lay close adjoining Abbotstone Downs, near Old Alresford. May 29th, 1849. W. A. B. spec. (See 'Cybele Brit.' vol. iii. p. 394.)

Stellaria glauca (p. 213). By the roadside, three-quarters of a mile out of Christchurch, towards Sopley and Ringwood. Aug. 21st, 1850. W. A. B. spec. (See 'Phytologist,' vol. iii. p. 896.)

Cerastium arvense (p. 213). Fallow field between Winchester and Mitcheldever. May 28th, 1849; first noticed there by Dr. A. D. White. W. A. B. spec.

Hypericum dubium (p. 271). Chawton Park, near Alton. June 10th, 1850. W. A. B. spec.

Potentilla argentea (p. 343). Sandy ground near Christchurch. June 30th, 1850. W. A. B. spec.

Epilobium roseum (p. 367). Near Petersfield, var. *floribus pallidis*. Aug. 20th, 1849. W. A. B. spec.

Myriophyllum verticillatum (p. 368). Ditch by the side of the

Redbridge canal, about a mile from Romsey. June 27th, 1850. W. A. B. spec.

Chrysosplenium alternifolium (p. 383). Boggy wood at Headley, in considerable abundance. May 1st, 1850. W. A. B. spec.

Saxifraga tridactylites (p. 383). Abbotstone Down, near Old Alresford, with *Cerastium arvense* and *Arenaria tenuifolia*. May 29th, 1849. W. A. B. spec.

Dipsacus pilosus (p. 428). Damp hedge by Boar-hunt Mill, near Fareham. Aug. 19th, 1850. W. A. B. spec.

Gnaphalium sylvaticum (p. 494). Chawton Park, near Alton. Aug. 3rd, 1850. W. A. B. spec. [Wood at Horndean, A. G. M.]

Arnoseris pusilla. "A mile north of Christchurch, on the Wimborne road." Aug. 21st, 1850. Bromfield in 'Phytologist,' vol. iii. p. 1076 (no spec.).

Hypochaeris glabra (p. 503). Sandy fields near Christchurch. Aug. 21st, 1850. W. A. B. spec.

Tragopogon pratensis. (Spec. 520. See also 'Phytologist,' vol. ii. p. 207). A specimen collected by Mr. Notcutt, at Wallington Pottery, near Fareham, appears to be the true *T. pratensis* with its florets slightly exceeding the phyllaries. This plant has however not yet been found in the Isle of Wight. A. G. M.

Hieracium murorum. On a bank by the roadside at Empshot, near Selborne. June 13, 1850. W. A. B. spec.

Campanula Rapunculus (p. 528). Aldershot. Mr. W. W. Reeves, 'Phytologist,' vol. iii. p. 1091 (no spec.).

Cicendia filiformis (p. 558). Gravel-pit at the north-east end of Hatchet Pond, near Beaulieu; in very great abundance. Sept. 13th, 1850. W. A. B. spec.

Mysotis sylvatica (p. 579). Stream-side between Lyss and Greatsham, near Petersfield. June 19th, 1850. W. A. B. spec.

Orobanche elatior (p. 601). In some chalky hollows on the left of the road, a little way out of Kingsclere, towards Itchinswell. July 12th, 1850. W. A. B. spec. [Also at the Grange, near Alresford. Rev. W. W. Spicer in Bot. Gaz. vol. ii. p. 326.]

Antirrhinum Orontium (p. 620). Sandy fields on Passfield Common, on Wolmer Forest; in plenty. August 29th, 1849. W. A. B. spec.; and "near Christchurch," Bromfield in 'Phytologist,' vol. iii. p. 1076 (no spec.).

Eufragia (Bartsia) viscosa (p. 634). North side of Sowley Pond, near Lymington. Sept. 11th, 1850. W. A. B. spec.

Melittis Melissophyllum (p. 665). Woods near Winton. W. A. B. spec.

Stachys germanica (p. 685). In an old barren pasture field near Itchin Abbots, near Winchester. July 21st, 1850. W. A. B. spec. [See also Rev. W. W. Spicer (in Bot. Gaz. vol. ii. p. 326) who describes the locality as "a field north of Itchin Abbas," where it seems the plant may have become extinct, 'Cybele Britannica,' vol. iii. pp. 483, 522.]

Allium oleraceum (p. 973). Chalky hollow near Itchin Abbots, near Winchester. July 24th, 1850. W. A. B. spec. [See Bot. Gaz. vol. ii. p. 326, "field north of Itchin Abbas," Rev. W. W. Spicer.] Found also in the Isle of Wight. A. G. M.

Actinocarpus Damasonium (p. 1003). Pool by the roadside, about two miles from Christchurch, on the way to Lyndhurst. Aug. 21st, 1850. W. A. B. spec. (confirming Mr. James Hussey).

Lemna gibba (p. 1012). In a pool at Burton, near Christchurch. August 21st, 1850. W. A. B. spec.

In Dr. Bromfield's copy of the 'Phytologist,' at pp. 1000 and 1001 of vol. ii., those of the "desiderata" which he had in later years ascertained to inhabit the country, or which had been reported to him, are distinguished by being *underlined*. Among the species thus marked occur the names of *Nasturtium amphibium*, *Sanguisorba officinalis*, and *Alchemilla vulgaris*. The first, being found in Devon and Sussex, is likely enough to have occurred, and the other two are here mentioned to direct attention to their possible existence in Hampshire.

Bembridge, December, 1859.

LASTREA REMOTA, A NEW BRITISH FERN.

By THOMAS MOORE.

It may be interesting to British botanists to learn that another Fern, heretofore known only as a native of southern Germany, has been added to our Flora. This addition, the *Lastrea remota* (*Aspidium remota*) of Braun, has been found recently at Windermere, by F. Clowes, Esq., and Mr. J. Hudhart; and I am indebted to Mr. Clowes for specimens.

The plant in question bears much resemblance to *Lastrea spinulosa* in general appearance, and was, indeed, at first con-

sidered to belong to that species; but its affinity is clearly with *Lastrea Filix-mas*. The outline of the frond is that of vigorous examples of *L. spinulosa*. The pinnules somewhat resemble *L. Filix-mas incisa*, but they are more decidedly stalked, more ovate and acute, and so much divided that the fronds become almost or quite tripinnate. The fructification is quite that of *L. Filix-mas*.

There will no doubt be, as there already has been, a difference of opinion as to the distinctness of this plant. Prof. Braun at first referred it to *Aspidium rigidum*, but subsequently regarded it as a distinct species, in which view he was followed by several botanists of high repute as pteridologists, namely, Kunze, Fée, and Mettenius. It appears, however, from specimens recently received from Prof. Braun, that he now considers it a variety of *Filix-mas*, which is also the view Mr. Clowes was at first inclined to adopt. No doubt the locality will be thoroughly searched in the ensuing season, and the plants submitted to various tests; but in the meantime, I may state that *Lastrea remota* appears to me to have reasonable claim to be distinguished from all the allied Ferns.

The following are its more prominent characters:—

LASTREA REMOTA: fronds oblong-lanceolate, subtripinnate, glabrous; pinnæ acuminate, distant below; pinnules distinct, pyramidal or ovate-oblong, acute, shortly petiolate below, sessile, with a narrow attachment, or more or less adnate upwards, the basal ones pinnatifid almost to the costa; lobes oblong, blunt, serrated, the serratures acute, mucronulate; sori copious over the whole frond, biserial near the costa; indusium reniform, persistent, obscurely eroso-dentate, without glands; caudex stout, ascending; stipes and rachis stout, scaly.

L. remota, Moore, *Index Filicum*, 102.

Aspidium remotum, A. Braun, *Verjung.* 330; Metten. *Fil. Hort. Bot. Lips.* 93.

Aspidium rigidum, β . *remotum*, A. Braun, *Döll. Rh. Fl.* 16.

Polystichum remotum, Koch, *Syn. ed.* 2, 979.

It may be well to mention that the plant, which had at first been gathered as a mere form of one of our common species, was determined too late in the season to admit of being again successfully searched for.

Chelsea.

LOOK AFTER DRABA VERNA.

How many of the following six forms are known to English botanists?

1. *Erophila* (*Draba*) *brachycarpa*, Jord. Leaves oval-lanceolate, narrowed at both extremities, entire or little toothed, clothed with simple and bifurcate hairs. Flower-stalks slender, flexuose. Sepals oval, hispid. Petals oboval-oblong, their lobes nearly contiguous. Pedicels flexuose, 2-4 times longer than the silicle. Silicles subelliptical-rounded, very obtuse at the summit, a little narrowed at their base. Style slender, very short. Seeds elliptical, very finely wrinkled, few in number.

On rocks and walls.

2. *E. glabrescens*, Jord. Leaves dark-green, lanceolate, narrow, seldom toothed, gradually tapering into a long petiole, smoothish or furnished with simple hairs. Flower-stalks flexuose, many-flowered. Sepals oval, a little hairy. Petals oboval-oblong, with slightly spreading lobes. Pedicels hardly three times as long as the silicle. Silicles nearly evenly oblong-elliptical, slightly narrowed at each extremity. Style very short. Seeds oblong-oval, reddish, nearly smooth, 20 to 24 in each hemicarp.

Dry open places.

3. *E. medioxima*, Jord. Characters the same as in *E. glabrescens*, only the pedicels are longer, 4-5 times the length of the silicle.

4. *E. hirtella*, Jord. Leaves linear-lanceolate, pointed, narrowed into a broad petiole, often furnished on each side with one or two very sharp teeth, covered on both faces with longish, spreading, often bifurcate hairs. Flower-stalks flexuose, hispid at their base. Sepals oval-oblong, a little unequal at the base, clothed above with long recurved hairs. Petals oblong, their lobes nearly contiguous. Pedicels not quite twice as long as the silicles, these of an oblong shape, a little narrowed at the summit, much narrowed from the lower third of their length. Style conspicuous. Seeds oval, brown, covered with minute points, in number 30-35 in each cell.

Sandy places; uncommon.

5. *E. stenocarpa*, Jord. Leaves linear, pointed, narrowed into a footstalk of nearly their own width, covered with numerous trifurcate hairs. Flower-stalks flexuose, numerous, in crowded

tufts. Sepals oblong, hispid. Petals oblong, their lobes slightly spreading. Pedicels twice as long as the silicles, these are linear-oblong, nearly four times longer than wide, narrowed at both ends. Seeds oval, pale brown, a little rough, about forty to the cell.

Dry open places.

6. *E. majuscula*, Jord. Leaves ashy-green, oblong-oboval, a little pointed, wedge-shaped at the base, with a petiole slightly narrower than their own breadth, entire or more usually bordered with strong teeth, clothed with short, thickly set bi- or tri-furcate hairs. Flower-stalks often hispid in their lower half. Sepals rounded, oval, little hispid at their summit. Petals large, nearly three times the size of the calyx, oboval, veined, with wide obtuse lobes. Silicles moderately broad, about half as long as the pedicel, oblong-elliptical, a little narrowed at their base, tipped with a prominent style. Seeds oval, pale-brown, finely covered with asperities, about forty in each cell.

Dry sandy places.

The six plants are thus divided dichotomously:—

- | | |
|--|------------------------|
| 1. Lobes of the petals more or less apart, spreading | 3 |
| Lobes of the petals nearly contiguous | 2 |
| 2. Silicles rounded, very obtuse at the top | <i>E. brachycarpa.</i> |
| Silicles oblong, much narrowed below | <i>E. hirtella.</i> |
| 3. Leaves linear or lanceolate, narrow | 4 |
| Leaves oblong, oboval | <i>E. majuscula.</i> |
| 4. Sepals oval, silicles oblong-elliptical | 5 |
| Sepals oblong, silicles linear oblong | <i>E. stenocarpa.</i> |
| 5. Pedicels hardly 3 times the length of the silicle | <i>E. glabrescens.</i> |
| Pedicels 4–5 times as long as the silicle | <i>E. medioxima.</i> |

(From *Boreau*, 'Flore du Centre de la France,' ed. 3, p. 64, etc. See also *Baker*, in 'Phytologist,' N.S. vol. ii. p. 501: 1857–1858).

FLEMING SOCIETY OF NATURAL SCIENCE.

New College, Edinburgh.

This Society met, Tuesday, 24th January,—W. B. Thomson, Esq., President,—when Mr. Crossby, M.P.S., read a paper on the relation between plants and animals. Mr. Crossby first showed the vagueness of the common distinctions of these two kingdoms, and then chemically and physiologically traced the essential dif-

ferences existing between them. He also showed how mutually dependent the one was on the other, and that it is to the mysterious principle called life that both owe their beauty and their character.

Mr. Valentine was then admitted a Member of the Society, and Mr. W. Carruthers, F.R.P.S., now of the British Museum, London, was elected an Honorary President. The Society then adjourned.

At the usual fortnightly meeting of this Society, held on Tuesday, 7th February, John Sadler, Esq., presiding, the following communications were read:—

1. "Notes on British Crustacea," by Alexander Kay, drawn from personal observation, and illustrated by specimens collected, during the last summer, on the Scottish shores.

2. "Notes on the Autumnal Flora of Dumfries and the Stewarty of Kirkeudbright," by Thomas Brisbane, Esq., Dumfries, communicated by Robert Brown, F.R.P.S., Treasurer.

The Flora of Dumfries has been studied, and by numerous botanists, and some have published accounts of it. Sir W. Jardine, Bart., gives a list of the rarer plants in the Statistical Account, and Dr. L. Lindsay has published a paper on the subject in the 'Phytologist' for 1855-6. Messrs. Gray and Cruickshank have also published lists in the 'Phytologist;' but by far the most delightful sketch is given in "The Rambles among the Wild Flowers," by Mr. John Sadler, one of our presidents. The paper gave an account of several excursions made through the county during the autumn of 1859. A number of interesting plants were noticed, of which the following are the rarer ones:—*Ranunculus Lingua*, *Sagina nodosa*, *Lobelia Dortmanna*, *Serratula tinctoria* (common at Parton, where he also found a viviparous *Carex*), *Cichorium Intybus*, *Sedum dasyphyllum*, *Hyoscyamus niger*, *Allosorus crispus*, *Dipsacus fullonum* (wild in front of Carlaverock Castle and Blackshaw Merse. *Cicuta virosa* and *Bidens cernua*, at Lochar Moss, at Collin. *Campanula rotundifolia* (white variety), *Andromeda polifolia* and *Utricularia minor* (Glasstown), *Gentiana campestris*, *Nymphaea alba*, abundantly in the stream of Lochar, and *Nuphar lutea* in Castledouglas Loch. *Geranium phaeum* (plentiful at the moat of Troqueer). *Sedum Telephium*, *Chrysanthemum leucanthemum* (very rare). *Orobancha major* (very rare). The district is unusually rich in Lichens, Mosses, and

Jungermanniæ, some of which were very rare. A lady had gathered 50 species of *Jungermanniæ* within five miles of Dumfries, and these are now in the herbarium of Mr. J. H. Martin. He frequently found white varieties of *Calluna vulgaris*. He also exhibited two specimens of *Eriophorum vaginatum*, showing the effect of the dry soil in stunting the growth, and *vice versâ*. Mr. Brown, in conclusion, gave a list of 100 plants found growing on the dock wall of Dumfries, from the foot of Assembly Street to the Castle dykes, a distance of about half a mile. The paper was illustrated by a large collection of plants gathered.

3. Sketch of a botanical excursion to the neighbourhood of Moffat, on July 9th, 1859, by John Sadler, Esq., F.B.S.E.; but as this paper will appear *in extenso* in the columns of the 'Phytologist,' we would refer our readers to it.

The Secretary noticed the following donation to the Library: 'Rambles among the Wild Flowers,' by John Sadler, F.B.S.E., from the Author. The Society then adjourned.

THIRSK NATURAL HISTORY SOCIETY.

Botanical Exchange Club.

The monthly meeting of this Society was held on the evening of Monday, the 5th of February. Mrs. Alban Atwood, of Knayton, near Thirsk, was admitted a member of the Exchange Club. Mr. J. G. Baker announced the receipt of a parcel from the Rev. W. R. Crotch, and communicated the following notices:—

"*Papaver Lecoquii*, Lamotte, in Mém. Acad. Clermont, 1851; Boreau, Pl. Cent. edit. 3, p. 30; Crépin, Notes Belg. p. 7. Mr. A. G. More sends an example of this plant from cultivated fields at Bembridge, in the Isle of Wight. Some time ago I gathered a Poppy in the Thirsk neighbourhood, which I suspect to be the same, but I neglected to study it in the living state, and have only a single dried specimen to refer to. It is nearest *P. dubium*, but in that species the sap is milky-white, whilst in *P. Lecoquii* it is yellow in colour. The latter is also more robust in growth than *dubium*, with leaves usually doubly pinnate, with narrow-linear segments. There are three closely allied plants with milky-white sap described by some of the later authors from adjacent countries of the Continent, viz. *P. collinum*, Bogentr., *P.*

modestum, Jord., and *P. Lamottei*, Boreau. Unless I am under a misapprehension, the common *dubium* of our country is identical with the first of these. Of our plant the capsule is oblong-cylindrical in shape, broadest rather above the middle, narrowed very gradually till within a short distance of the base, the stigmatiferous disc (in the mature capsule) flattish at the sides, but raised at the centre into a rounded protuberance, its crenations inconspicuous, and the stigmas are from five to seven in number, and fall short of the edge of the disc by a little space. In *P. Lecoquii* the capsule is exceedingly similar in shape, but the stigmatiferous disc is more convex, its crenations much more conspicuous and decided, and the stigmas are eight or nine in number, and reach quite to the edge of the disc. It was originally described from the centre of France, and has since been met with by Messrs. Crépin and Graret in several stations in Belgium. It appears to have a preference for calcareous districts, as is stated to be also the case with *P. modestum*.

“*Fumaria pallidiflora*, Jordan. A study of the descriptions in Boreau’s Flora, and comparison with French specimens, shows me that the *Fumaria* of which I spoke in a recent note as the normal form of *capreolata* is identical with this plant. The true *F. speciosa*, Jordan, is very closely allied to it, but has larger, deeper-coloured flowers, and broader based fruit. *F. pallidiflora* and *Boræi* are no doubt both of them both frequent and widely diffused in Britain, and I hope that by next year we shall be able to get a sufficient stock to meet the requirements of our friends. Both of them are sometimes plentiful enough in this neighbourhood, but they are uncertain in their appearance, and last year I only dried a small supply of *Boræi*. *Barbarea intermedia*, Boreau, has been met with by Mr. More in Ireland, in county Armagh. He writes respecting it, ‘My specimens were collected in 1844, and it is to Mr. Borrer that I am indebted for the name. They differ in no respect whatever from what you sent me from Thirsk last year, labelled Hulme, Lancashire, by Mr. Hardy, but I cannot answer for the plant being a true native. All the determinable specimens were gathered in cultivated fields, where it was an abundant weed, and I think some younger plants from roadsides adjoining were the same. I half suspect that the plant is sometimes grown in gardens.’

“*Silene italica*, Pers. Mr. J. T. Syme sends a supply of this

species from the neighbourhood of Dartford, in Kent; and Mr. John Barton a couple of examples from a 'hedge-bank at Cherry Hinton, two miles and a half from Bambridge, possibly an escape from the Botanic Gardens.'

"*Trifolium elegans*, Savi. Last year I met with a patch of this alien *Trefoil* upon the side of the railway embankment, about half a mile north of Thirsk station, and Mr. John Tatham has shown a specimen gathered by himself in the neighbourhood of Settle.

"*Trifolium resupinatum* is sent by Dr. Windsor from rubbish-heaps at Pendleton near Manchester, where it was gathered by Mr. Buxton.

"*Setaria viridis*. A few plants were found this autumn by Mr T. W. Gissing, in a cultivated field near Wakefield."

Review.

The Natural History Review and Quarterly Journal of Science.

London: Williams and Norgate. April, 1859.*

(From a Correspondent.)

Three new species of South African plants were communicated to the Dublin University Zoological and Botanical Association by Professor Harvey, M.D., on the 21st of May, 1858. A memoir, or history, and also a description of these botanical novelties are supplied by the Doctor, and are reprinted in the Review, pp. 95-99. They are also figured in the January part of the same periodical, plates 1, 2, 3, 4.

The first of these plants is a small tree or shrub with light porous wood, leafy branches, petioled roundish scalloped leaves, with resinous glandular dots, and without stipules. The flowers are in clusters, having persistent, glabrous, dotted sepals, and broadly linear-oblong, thick, glossy, bright-crimson petals. The structural peculiarities of the ovary point it out, the Doctor writes, "as probably the type of a new Order." It will be a desirable acquisition to our greenhouses and conservatories. It is proposed to name the genus *Greyia*, in compliment to his excellency the Governor of the Colony, and this species *Sutherlandi*, to commemorate its discoverer. It grows in exposed places, near Port Natal, and its elevation is from 2000 feet to 6000. A note warns

* This arrived too late to appear at the proper time, and hence it was overlooked.

botanists not to confound it with *Grayia*, Hooker and Arnott. The author naïvely remarks that "the similarity of sound certainly is great (are they not identical?); but as there are two British peerages (one Grey and the other Gray) which are held to be sufficiently different, we trust that our *Greyia* and *Grayia* may without confusion also be admitted." Shade of Linnæus, what would you say, if you were to revisit the scene of your former triumphs, and were permitted to speak your mind?

The second novelty is *Sterculia Alexandri*, and the third is *Anagallis Huttoni*; both these are described in the April number of the Review, and figured in the January part. This latter plant does not differ very materially from *Anagallis arvensis*. It is said that the root is probably perennial. It would be worth while to inquire whether or not the root of *A. arvensis* would not become occasionally perennial in South Africa.

This part of the 'Natural History Review' (April, 1859, p. 155) contains also another valuable botanical paper by our occasional correspondent, D. Moore, the learned Curator of the Botanical Gardens of Glasnevin. This paper, which is on pp. 155-160, is named "Observations on some plants, considered by M. de Candolle to be alien and introduced into Britain. Also notices of some new species to the Irish Flora (species new to the Irish Flora?), with additional habitats (localities?) of others hitherto supposed to be rare." The author of this paper states that on studying the learned author's chapter on the species naturalized in Great Britain (Ireland is excluded) and also "a very able article" on the same subject, which appeared in the 'Phytologist' for June, 1858, "I was led to consider the conclusions come to respecting several plants attentively, in so far as concerns Ireland." It is not very clear how the author of this very well-written paper could "consider the conclusions come to" on a subject where nothing has been concluded by any of the learned botanical geographers referred to by the writer.

The first plant noticed is *Stratiotes aloides*, which Mr. Moore maintains to be a genuine native of England, in direct opposition to Professor De Candolle, who ranks it among the plants which have been naturalized from a great distance. In England, wherever this plant is found, as in the eastern lowlands, viz. the counties of Norfolk, Huntingdon, Lincoln, etc.,* it presents the

* This plant has been recently reported from Perth.

appearance of being truly wild. In Europe it is reported from the Scandinavian peninsula, excluding Norwegian Lapland; also from Russia (south and middle); Italy, from Rome to the Alps; north of Germany, Holland, Belgium, south of France, Austria, Hungary, etc. De Candolle regards this plant as an introduction from Java, the Moluccas and Malabar. Query,—Has it been observed anywhere between Malabar, its most western native locality, and Hungary, its nearest adopted home in Europe? Is it a denizen of Asia Minor, or of Greece, or Turkey? Is the Flora of the Euphrates and its tributaries well known? Have the streamlets and valleys of Armenia been well explored? What may be the botanical productions of the countries whence the human race after the Flood departed to colonize the earth after its submersion in the waters of the great deluge.

Mr. Moore claims *Narcissus biflorus* as truly indigenous in Ireland. This is one of the doubtful species which Professor De Candolle conjectures to have been introduced between the Roman dominion in Britain and the discovery of America, or in round numbers, 1,500 years: a sufficient period for the naturalization of such a plant as *Narcissus*, which is very hardy and very durable. Professor De Candolle states that it is indigenous in Italy and in the south of France. Mr. Moore considers it to be a plant of western Europe, and he is probably right. It does not appear in Europe further east than the Tyrol and Italy.

Senebiera didyma is one of the ten species which Britain, according to De Candolle's theory, has received from America. This plant is far more plentiful in the south-west than in the south-east of England. This is also a plant of Spain and the south of France. Probably Gothland, in the Baltic, is its most eastern range in Europe.

Again, Mr. Moore considers *Mercurialis annuus* and *Geranium pyrenaicum* as both truly wild in Ireland. In the 'Géographie Botanique' they are in the list of thirty-seven European species supposed to be naturalized in Great Britain. The annual Mercury is very plentiful in the vale of the Thames, and if it be a native of Ireland, where it is said to be very local, it may surely be admitted to be a native of Britain. Its European range is, from north to south, from Norway to Spain; and from east to west, from Turkey to Portugal. *Geranium pyrenaicum* is not restricted to the vale of the Thames; it is found near the top of Arthur's

Seat, and in places about Edinburgh. Its European range is Greece, Russia, Germany, Spain, Denmark, Sweden (south), Belgium, Italy, Sicily, Dalmatia, Hungary, etc. It is not very easy to see on what grounds either of these two plants should be considered as interlopers in Britain.

Such plants, Mr. Moore continues, as *Myrrhis odorata*, *Saponaria officinalis*, *Silybum* (not *Sylibum*, as in the Review, where *Anachris* is printed instead of *Anacharis*) *Marianus*, *Cheiranthus Cheiri*, *Antirrhinum majus*, *Anchusa sempervirens*, *Sedum dasyphyllum*, *S. album*, *Veronica Buxbaumii* (not *Buxbaumi*), though met with plentifully in some parts of the country, are not considered truly indigenous in Ireland.

The following are plants only recently detected in Ireland, viz. *Lycopodium inundatum*, lately discovered by Henry Lubohm, on the margin of a small lake on the property of James Ellis, Esq., near Letterpack, Connemara, a highly interesting addition to the Flora of Ireland. *Hypnum megapolitanum* is another addition made by Mr. D. Orr and by Mr. Moore "between Malahide and Portrane." It had only been previously known as growing sparingly near Shoreham in Sussex, and Liverpool. Query,—Southport, where so many rare mosses grow?

Galium elongatum is another acquisition. It grows in most meadows near the Boyne.

Blysmus compressus has been recently found by Mr. John Sullivan, in the county of Cork. It has not hitherto been recorded from Ireland.

Additional stations (habitats) are recorded for *Allium Scorodoprasum* (not *Scorodaprasum* as repeatedly printed) and *Lathyrus palustris*. Of the former the true plant grows in the county of Cork, at Foate, in great profusion.

Allium arenarium (*A. Scorodoprasum*, Linn.), of the Irish Floras, is not that species, but a state of *A. vineale*. *Lathyrus palustris* is no longer a doubtful inhabitant of Ireland. It abounds in the county of Antrim, where it was originally discovered by Mr. Templeton, also in moist meadows, Murrough, near Wicklow, near Portumna, county of Galway, and in almost every moist meadow on the shores of Lough Erne, in the counties of Fermanagh and Cavan. Besides, Mr. Carroll has observed it in the south.

There is in this part of the 'Natural History Review,' an

address to the Geological Society of Dublin. In this paper the theological theories of the origin of the earth's crust, or Mr. Gosse's prochronic existence of organic beings (not a real existence of fossils) as explained in 'Omphalos,' also the late Hugh Miller's theory as laid down in his 'Testimony of the Rocks,' and Mr. M'Causland's ideas developed in his 'Sermons in Stones,' are stated to be curious illustrations of speculative errors which enjoy great popularity among the non-geological portion of the reading public.

BOTANICAL NOTES, NOTICES, AND QUERIES.

WAHLENBERGIA HEDERACEA.

Sir,—In a report which I transmitted to you of the plants found in Bewdley Forest, and which appeared in the 'Phytologist' of December last, it is there stated that *Wahlenbergia*, reported by its old generic name *Campanula hederacea*, was found in the Forest. It is due to W. Mathews, Esq., of Edgbaston, that I am enabled to correct an error as to the locality of this plant, which has been traced to the Clee hills. *Wahlenbergia*, therefore, does not at present belong to the Flora of Bewdley Forest.

Birmingham, Feb. 20.

WILLIAM HINDS, M.D.

[We are indebted to Mr. Lees for the information that *Lactuca virosa* is entered by mistake as a Wyre Forest plant. Our esteemed correspondent states that "*Wahlenbergia* was gathered on the Titterstone Clee Hill near Ludlow, while the *Lactuca* had been named from recollection, etc." On the same excellent authority it is stated that "*Corydalis lutea*, if gathered on some garden wall, or near a cottage on the forest border, deserves no status as an indigenous forest plant."

Query.—Have the members of the Birmingham Natural History Society ever heard of Mr. Jordan of Bewdley, who has botanized in Wyre Forest probably threescore years, and is intimately acquainted with its botanical productions?]

FLORA OF DINAS BRAN AND LLANGOLLEN.

I find, on referring to notes of my Welsh trip this last summer, the following, which were not noticed by your correspondent. Dinas Bran—*Cystopteris fragilis*, *Sedum Telephium*, *Lactuca muralis*. Limestone rocks near Dinas Bran—*Cystopteris dentata*. About Llangollen—*Daphne Laureola*, *Hieracium maculatum*, *Orobancha major*, *Listera ovata*, *Nepeta Cataria*, *Hypericum Androsæum* and *pulchrum*, *Aquilegia*. In addition, the Oswestry Field Naturalists' Club found in July, *Arabis hirsuta*, *Thalictrum minus*, *Pinguicula vulgaris*, *Anagallis tenella*, *Pyrus Aria* β *intermedia*, *Cystopteris* "*regia*," *Lycopodium clavatum*, and *L. alpinum*. I copied these last from a local newspaper.

T. F. R.

SEMPERVIVUM TECTORUM.

Houseleek, Sedum, Sengreen.—With reference to E. M. A.'s note in the 'Phytologist' for September, 1859, I can positively say that this plant grows as commonly on the thatched roofs of houses and other buildings as on walls. In a compendious 'Herbal' by John Archer, one of his Majesty's Physicians, London, 1673, he tells us that this herb groweth on the tops of houses, or on walls. It is governed by Jupiter. It is said that the herb preserveth the house it grows on from fire, and is good for all heats, as well inward as outward, in eyes, face, or elsewhere; you may make a posset, and strain the juice into it. Many other virtues are named by Mr. Archer.

H. B.

LYTHRUM SALICARIA.

I see Mr. Sim, p. 356, speaks of the rarity of *Lythrum Salicaria* in Scotland. It may interest him to know that I found it growing luxuriantly at Borodale, and near Shiel Bridge, in the West Highlands, 1856.

T. F. R.

MAGNIFICENT ANGELICA.

In a ditch near the margin of the Tay, about a mile below Perth, on the 14th September, 1859, I gathered a large specimen of *Angelica sylvestris*. I pulled it up by the root. The following were some of its dimensions:—Entire length, 6 feet 6 inches; circumference of stem at base, $3\frac{1}{4}$ inches; diameter of main umbel, 9 inches; number of umbels, 11; number of umbellules respectively, 26, 25, 41, 24, 41, 37, 12, 21, 21, 34, 45,—total, 327. Each umbellule contained on an average about 45 or 46 dicarpous seeds, equal to 90 or 92, which, multiplied by 327, gives in round numbers no less a sum than 30,000. Amazing production! Astonishing fertility! Will some of the readers of the 'Phytologist' look out for a larger, if they have nothing better to do?

JOHN SIM.

Bridge End, Perth, September 15, 1859.

LOMARIA ALPINA.

Will the following be of any interest in reference to *Lomaria alpina* as a supposed British plant? A fair and noble cultivator of Ferns has in the grounds at her residence a good Fernery of hardy Ferns; among them *Lomaria alpina* in great plenty, on an old bank, well-established, and of several years' growth. Long ago, and before I knew anything of Mr. Wollaston's supposed discovery of this plant in Scotland, L——, who is well acquainted with this species, informed me that she was *quite certain* that she had seen the same plant in the Lake district, and truly wild there, although the large patch in her collection of living Ferns was most likely of foreign or garden origin. I enclose a scrap of the cultivated plant, that there may be no doubt as to the correctness of what is intended by *L. alpina*. I have no authority to make use of her ladyship's name in this communication, nor have I indeed conversed with her but that once upon the subject.

E. E.

MISTLETOE.

In 'Chambers' Journal' for December, 1859, there is an article on this plant, and the writer, previously to quoting "Old Gerarde," says,—“This strange plant is the only true parasitic plant indigenous to this country,” and that it is not a native of either Scotland or Ireland. Also “that Shakspeare has but one solitary allusion to the Mistletoe—an uncomplimentary one; he calls it ‘the baleful Mistletoe.’ In revenge for this hard epithet, the slandered plant has fastened on the Limes of Datchet Mead, that may have seen Sir John display his alacrity in sinking, till they are fast decaying, and realize the poet’s description, of

“Trees, though summer, yet forlorn and lean,
O’ercome with Moss and baleful Mistletoe.”

I wish to know whether the statements contained in the first paragraph are correct, or not?

With respect to Shakspeare’s calling the Mistletoe “baleful,” it should be remembered that the scene described is a forest near Rome, where the Mistletoe might have grown abundantly on the trees, and been baleful; but whether it is so on the Lime-trees in Datchet Mead I know not. Some of your readers can tell us how this is.

N.B. Mr. Johns, in his ‘Flowers of the Field,’ says the wood of the common Mistletoe has been found to contain twice as much potash and five times as much phosphoric acid as the wood of the foster tree. S. B.

GYMNADENIA CONOPSEA.

Have any correspondents to the ‘Phytologist’ ever observed a state of *Gymnad. Conopsea* growing in peat bogs? The only place where it is found near here (Oxford) are of that nature, and it appears to me to grow thrice as large, to flower a month or six weeks later, and to be much more fragrant than the ordinary form of “dry heaths and pastures” which I once found near Reading. There is probably as much difference between the two as between *Habenaria bifolia* and *H. chlorantha*, but I have been as yet unable to get fresh specimens of both at the same time to make a comparison. The bog plant grows two or three feet high, robust and fragrant in proportion, but perhaps only differs from the plant of the hills and pastures by luxuriance, induced by its moisture and more sheltered situation. H. B.

WELSH BOTANY.

Llandderfel, Merioneth, N. Wales.—The *Myrrhis odorata* grows hereabouts. Our parish clerk, John Jones (who, by the way, is much pleased with your ‘Illustrated Handbook of British Botany’), has just pointed it out to me. I am indebted to the same kind friend for much local information upon the botany of the neighbourhood, which I will endeavour from time to time to put into order for the pages of the ‘Phytologist,’ if it be worth notice. The *Botrychium Lunaria* is pretty genera upon old pastures of moderate elevation all around, and where you do find it, it occurs in abundance. Some specimens were gathered above nine inches in height. W. P.

CLAYTONIA ALSINOIDES.

I have growing in a pot a living plant, or rather, plants, of this beautiful succulent annual. It has, since last May, when I brought it from the Wood of Scone, been constantly in flower up to the present time. It sheds its seeds immediately after flowering; so I expect next year in my little spot of earth to have a fine crop of my little favourite. JOHN SIM.

OSMUNDA LUZON (74) *repens Fumariæ folio*.

"F. Kamel, amongst his last manuscripts, sent me this, under the title of *Fumaria capillaris*. I take it to be a flowering Fern, and his description (as well as design) seems to favour my conjecture."—From Petiver, tab. 47, fig. 8.

Can any reader identify this plant?

MOSSES, ETC. FROM BEWDLEY FOREST.

(From 'Transactions of the Birmingham Natural History Society.')

Exhibited in January,—Hypnum proliferum, H. triquetrum, H. confertum, H. Schreberi, H. cupressiforme, H. splendens, Bryum ligulatum, B. roseum, B. androzyum, Polytrichum aloides, Trichostomum heterostichum, Tortula muralis, Dicranum scoparium, Jungermannia asplenioides, Peltidea canina.

Corrigenda in Welsh Botany, in February Number.—"Pont-y-Beddws," at page 42 and wherever it occurs in the paper, should be "Pont Cwm Byddew." "Brynhilwg," at page 44, should be "Bronheulog." "Bod-veyne," same page, should be "Bodwenni." "Plas Issa," same page, should be "Ty Isaf." "Plas," near the bottom of page 48, should read thus, "Plas Palé." "Widdya," near the bottom of page 50, should be "Wyddfa." "Pennanth," on page 53, should be "Pennant."

Communications have been received from

James Backhouse, Jun.; Sidney Beisley; John Sim; Rev. R. E. Cole; A. G. More, F.L.S.; Thomas Moore; T. Westwood; E. Edwards; Rev. W. M. Hind, Secretary of the Birmingham Natural History Society; J. G. Baker; Querist; S. B.; H. B.; H. Trimen; Rev. T. Salway; Alexander C. Kay; Dr. Hinds; Edwin Lees, F.L.S.; H. Boswell, Oxford; G. R. Twinn; T. F. R.; E. E.; W. P.; R. Ingle.

BOOKS RECEIVED FOR REVIEW.

The Critic; four numbers.

Natural History Review for January, 1860.

Harrow Gazette, etc.

Gardeners' Chronicle; six numbers.

Weitere Zusätze zur Flora der Pfalz; von Dr. F. Schultz.

Proceedings of the Natural History Society of Dublin, Vol. I. part 3.



Contributors are requested to send their communications direct to MR. IRVINE, 28, Upper Manor Street, Chelsea, London, S.W.

PLANTS IN THE NEIGHBOURHOOD OF DUNKIRK.

By R. E. C.

Perhaps the following notice of the Flora of Dunkirk may prove interesting to some of the readers of the 'Phytologist,' as showing the character of the vegetation on the northern extremity of the French coast,—how far it agrees with, or differs from, that of our own shores.

The plants contained in the following list are all from the immediate neighbourhood of Dunkirk,—gathered principally among the dunes, or sandhills, along the coast, from which the town takes its name (*Flemish*, Duinkerke, 'Church of the Dunes'), or on the level sandy ground immediately behind them. The flat inland country presents little of interest to the botanist, the few inland plants given below being the only noteworthy species observed there in the course of two summers' residence. It will be seen that Dunkirk can boast of no plants absolutely unknown on this side the Channel, though it has several, such as *Eryngium campestre*, *Silene conica*, *Anchusa officinalis*, of extremely rare occurrence amongst us.

It needs only to add in explanation of the localities mentioned, that Rosendael is the little village which lies next to Dunkirk on the north-east, as do Mardyck and St. Pol on the south-west; and that the canals spoken of run by the sides of all the principal roads through that flat country.

Thalictrum minus. Sandhills between Rosendael and the sea.

Cakile maritima. On the dunes.

Senebiera Coronopus. On the dunes.

Lepidium rudemale. Cornfields by the sea, near Mardyck.

Sisymbrium Sophia. Sandy roadsides and fields about Mardyck.

Helianthemum vulgare. On the dunes.

Viola tricolor. On the dunes.

Saponaria officinalis. On the ramparts close to the Porte du Fort-Louis.

Silene nutans. Bank of the canal to Mardyck.—Leaves much narrower than in the Nottingham plant, with which I think I am right in identifying it. ? *S. italica*.

Silene conica. Sandy fields near the sea.

- Spergula nodosa*. Sandy ground.
- Arenaria peploides*. On the dunes.
- Arenaria marina*. Sides of the outer moat (salt-water).
- Parnassia palustris*. Moist hollows among the dunes, plentifully.
- Erodium cicutarium*. Sandy ground.
- Medicago falcata*. Glacis near Rosendael.
- Medicago sativa*. About the fortifications. Probably sown.
- Medicago minima*. Sandy ground.
- Melilotus officinalis*. Fields by the Canal des Möeres.
- Trifolium arvense*. On the dunes, abundantly.
- Trifolium fragiferum*. Moist places among the dunes.
- Hippuris vulgaris*. Side of the canal to Furnes.
- Hydrocotyle vulgaris*. Marshes about Fort-Louis.
- Eryngium maritimum*. Abundant on the dunes.
- Eryngium campestre*. Sea-bank opposite Fort-Mardyck. It seems strange that it should not have established itself better on the English coast. I have noticed it at Dunkirk and Calais, and also plentifully about Boulogne.
- Asperula cynanchica*. On the dunes, etc.
- Cichorium Intybus*. Fields, waste ground.
- Tanacetum vulgare*. Roadside beyond Rosendael.
- Bidens cernua*. Ditch beyond Rosendael church.
- Artemisia maritima*. Sea-bank to the left (south-west) of the harbour.
- Gnaphalium luteo-album*? Cornfields between St. Pol and the sea.
- Erigeron acris*. On the glacis.
- Aster Tripolium*. Salt-water moats and canals.
- Jasione montana*. On the dunes.
- Chlora perfoliata*. Dunes to the right (north-east) of the harbour.
- Lycopsis arvensis*. Sandy ground between Rosendael and the sea.
- Anchusa officinalis*. On the glacis between Porte de l'Estran and Porte de Nienport.
- Cynoglossum officinale*. About Mardyck.
- Leonurus Cardiacæ*. Side of the road to Furnes.
- Stachys palustris*. Cornfields between Fort-Mardyck and the sea.

Marrubium vulgare. Sea-bank near Mardyck.

Lysimachia Nummularia. Bank of the canal to Furnes.

Samolus Valerandi. Marshes round Fort-Louis.

Glaux maritima. In the basin for clearing the harbour's mouth.

Statice Armeria. Sea-bank to the left of the harbour.

Plantago maritima. Basin for clearing the harbour's mouth.

Chenopodium maritimum. Salt-water moats and canals.

Atriplex laciniata? Sandy shore.

Salsola Kali. Loose sandy shore.

Salicornia herbacea. Seashore, plentifully.

Polygonum Fagopyrum. Cornfields, etc., scarcely wild.

Triglochin palustre. Edge of canal to Mardyck.

Allium vineale. Sandy fields between Fort-Mardyck and the Calais road.

Asparagus officinalis. Sand-hills about Rosendael, sparingly.

Hydrocharis Morsus-ranæ. Moat on the right of the Porte du Fort-Louis.

Neottia spiralis. Common land between the Mardyck road and the sea.

Herminium Monorchis. Moist hollows among the dunes, between Rosendael and the sea.

Epipactis latifolia. Sand-hills between the Porte du Mardyck and the Basin des Chasses.

Ammophila arundinacea. On the dunes.

Elymus arenarius. On the dunes.

Triticum junceum. On the dunes.

Scirpus maritimus. Salt-water moats and ditches.

Blysmus compressus. Canal-bank near Mardyck.

Carex arenaria. Loose sand-hills, abundantly.

Carex extensa. Under moat of the fortifications near the Porte de l'Estran.

Carex —? Marshy places among the dunes.

ADDITIONS TO THE FLORA OXONIENSIS.

By H. BOSWELL.

I take this opportunity of sending you a notice of some few plants I have met with during last summer, which are unmen-

tioned in the 'Flora of Oxfordshire' as being found in this neighbourhood, and in fact new to the district, as far as I can ascertain.

Rosa villosa grows on the edge of Bagley Wood, where I was rather surprised to find it, having thought it a north-country plant. Below the thicket of which it, *R. arvensis*, and *R. canina* form part, grow *Hierac. vulgatum*, and a number of Mosses rare here, as *Bartramia pomiformis*, *Dicranum palustre*, etc. The soil is gravel and sand. In another part of the wood *Rosa micrantha* is found, and close by was one which I think a variety of *R. Sabini*, but in a state that did not permit me to feel very sure of its species, *i.e.* the flowers gone, but the fruit unformed. *R. micrantha* also occurs at Shotover, in a thicket, with *Senecio saracenicus* and *Hypericum Androsæmum*; but cultivation seems approaching, and threatening to exterminate these before long. Among this same plantation, and at no great distance, I saw a patch of *Muscari racemosum*, in the warm days of last March, apparently as native there as the Violets and Primroses with which it grew; the soil, a light and sandy one (greensand), covered with patches of *Tortula subulata* and *Anacalypta lanceolata*.

Vicia lathyroides I have seen between Stow Wood and Headington Wick, and again in meadows under Bagley Wood, near Bayworth, in which meadows, but further from the shade of the wood, grows also *Ophioglossum vulgatum*; this occurs again near Kidlington and Islip, but is usually bitten off, by sheep, I suppose. In fields near Watlington, and again near Goring, I saw *Cuscuta Trifolii* in patches as large as an ordinary dining-table, and conspicuous amid the green Clover around, having quite destroyed and withered it up where it grew. This is probably introduced with the clover-seed from abroad; it seemed a matter of equal surprise and dislike to the farmers on whose land it had effected a settlement. *Ænanthe fluvialis* is plentiful in some parts of the Isis and Cherwell, and much more frequent here than *Æ. Phellandrium*, which I have seen but once or twice.

Carex fulva is to be found in the bogs under Stow Wood, Headington Wick, and Bullingdon Green; most plentiful in the last-named place, accompanied by *C. flava*, *panicea*, etc., the ground being a spongy mass of *Hypnum stillatum* and *H. cuspidatum*, *Bryum pseudo-triquetrum*, and similar Mosses. *Sonchus asper* is as common here as *S. oleraceus*. *Anthriscus vulgaris* is mentioned in the 'Flora of Oxfordshire' without date or locality,

and apparently rather as it might be found than because it had ever been, like *Solidago Virgaurea* and one or two others, which I could never hear had been seen by any botanist in the neighbourhood. I searched in vain for the *Anthriscus* till last May, when it was brought to me by a friend who had found it near Shotover and Wheatley, and thought he had *Caucalis daucoides*, a pleasing illusion I was obliged to dispel after examining the plant. Guided by his directions, I went to the place, and found a small patch of the plant growing, under the shade of a hedge-bank, with *Arenaria tenuifolia*. In the same neighbourhood, and again at Bagley Wood, and one or two other places, I found *Viola flavicornis* (var. *pumila*, Hook. and Arnott), a very near relation, at least, to *V. canina*.

Medicago sativa occurs in several places, and also *Trifolium incarnatum*, but doubtless introduced. The two seem to have established themselves and assumed a wild aspect in some broken limestone ground near Stow Wood. *Hieracium amplexicaule* seems firmly seated on the bank of the Cherwell, near the Botanic Garden, and again on the walls of Magdalen College. Of decided aliens I have also seen the following :—*Hypericum calycinum*, in thickets in Nuneham Park, introduced from the not distant gardens. *Carum Carui*, in a meadow off the Bothy road. *Camelina sativa*, clover-fields near the Warneford Asylum, with *Anthemis arvensis*, etc. *Linaria purpurea*, rubbish near the Great Western Railway station, not likely to become a fixed inhabitant any more than the *Carum*. *Aster Tradescanti*, the Michaelmas Daisy, seems firmly established, for in two or three places it has continued to flower for the last three seasons. Last autumn I met with it frequently, and always far away from houses or gardens, as in several places on the banks of the Cherwell, in Christ Church meadow, whither it had probably come from the Botanic Garden; on the river-bank, near Louse Lock, and in hedges near the Warneford Asylum, among a thicket of Brambles, amid whose shelter it attained a height of four or five feet, like the *Helminthia echiodides*, with which it grew. This is a plant I have never seen noticed as introducing itself into the British Flora before.

Cornmarket, Oxford, 23rd January, 1860.

“LONG-PURPLES” OF SHAKSPEARE.

If your correspondent E. M. A. had ever diligently inquired in the vicinity of Stratford-on-Avon, where Shakspeare spent his youth, the plant the bard intended would have been at once identified. A very finely developed *Orchis mascula* is as good a “Long-Purple” as any critic could desire, and moreover it agrees in its flowering-time with the other plants of Ophelia’s garland—Crow-flowers, dead Nettles, and Daisies ; while the *Lythrum Salicaria* shows itself in purple array at a much later date. The name “Long-purple” is applied by rustics to several common plants, and the *Lythrum* has it locally, as mentioned by the Northamptonshire poet, Clare—

“And oft *Long-purples* on the water’s brink,
Have tempted me to wade, in spite of fate,
To pluck the flowers.”

But though several plants bear the vernacular appellation of “Long-purples,” we can only truly identify the flower of Ophelia’s garland by the “grosser name” given to it, according to the bard, by “liberal,” or rather I should say, *vulgar* “shepherds.” This at once decides the point. When spending a fortnight in the country near Stratford a few years ago, I got up some memoranda in reference to the “Rural Haunts of Shakspeare,” as may be seen on the table at the Poet’s birth-place at the present moment. I was careful to inquire as to the plants mentioned by the great dramatist, and arrived at the conclusion that the Long-purple, or common Purple Orchis (*Orchis mascula*), still answers to what Shakspeare has averred respecting it of plain-speaking rustics and “cold maids.” This “grosser name,” yet applied to the Orchis in the country, has, I believe, never been brought into view by any of the legion of commentators ; and I am sorry that as it is not quite adapted to appear in type, I must veil it with the same ingenuity that the poet did in Hamlet, though in some of his other plays he has not been quite so careful. But here the modesty of a cold maid about to take a cold and melancholy plunge, had to be considered. I give the name in confidence to your *private* ear, and those not perfectly satisfied on the subject will probably be so if they consult any of the old Herbals, where the English Orchises and their alleged “virtues” are enumerated, as well as their common names given.

EDWIN LEES.

SOME REMARKS ON THE ANNUAL ADDRESS, IN THE
'PHYTOLOGIST,' FOR 1860.

By a Correspondent.

Barbarea intermedia, Bor., is, I believe, synonymous with *B. angustana*, Bois., only, and totally distinct from *B. arcuata*, *B. vulgaris*, and *B. stricta*. *B. intermedia* is in appearance somewhat between *B. præcox* and *B. vulgaris*, more like in its foliage to the former, but with pods resembling those of *B. vulgaris*, only terminating in a shorter, thicker style. It is not identical with either species.

M. Crépin (see 'Phytologist,' vol. iv. n. s. p. 11) distinguishes *B. intermedia* from *B. præcox* by the taste. The former is unpleasantly bitter, the latter a desirable constituent in salads.

As a British plant *B. intermedia* is only known in the neighbourhood of Manchester (Mr. Buxton, Mr. J. G. Baker, etc.), and in Armagh, Ireland (Mr. A. G. More), probably in neither case an indigenous plant.

The plant mentioned at p. 3, under the name of *Barbarea angustifolia* of Ehr., is still less likely to be confounded with any of the British species, being placed by Reichenbach in the genus *Syrenia*, and given by Nymann under the name of *Erysimum angustifolium*, Ehr. Beit. ('Sylloge,' p. 194).

Galium insubricum (of Gaud.) is mentioned in the third edition of Babington's Manual, 1851, in the London Catalogue for 1850, etc., if not earlier, only as a variety of *G. Mollugo*; neither does Mr. J. G. Baker consider it a distinct species (see 'Phytologist,' n. s. vol. iii. p. 19).

Fumaria muralis, Sond. Should not this rather be considered the substitution of a new name than as an instance of the transgression of botanical boundaries? From Mr. Babington's paper (read before the Linnæan Society, Nov. 17, 1859) we learn that *F. muralis* was first observed by Mr. Leighton, who, in his 'Shropshire Flora,' considered it the type of *F. capreolata*, as known by himself.

That *F. muralis* is not an exclusively southern species is sufficiently evident when we are told it is the same as the *capreolata*, var. *media*, of Scandinavia, included under its proper name of

F. muralis, in Fries's *Summa Veget. Scand.*, p. 146, also occurring at Hamburg (Koch, 'Synopsis').

Blechnum alpinum. Surely it is time the mystery about this Fern were explained. It is hardly to be expected that British botanists will accept it as an indigenous species. Will not its finder or possessor kindly inform us whether any mistake is possible about its identity? At any rate the occurrence of a single root should not be held as very conclusive of its wildness; and mistakes have so often arisen from mixing specimens, that it would not be a matter of any great surprise if something of the kind had occurred in this instance. Besides, there are several singular varieties of *Blechnum Spicant*, which might deceive an inexperienced eye, though not that of Mr. Wollaston.

Delphinium Ajacis. May not this prove to be the commoner of the two in Britain, and the more northern or western species?

Muscari racemosum is not, I surmise, any *recent* discovery in Cambridgeshire. This county is expressly mentioned in the second volume of the 'Cybele Britannica;' and when I was at Trinity, the plant was spoken of as occurring near Cambridge, but its nativity there is quite another question.

P. 7. Would it not be well to know something more of the conditions under which those four plants occur, before assuming the range of *Cynoglossum sylv.*, *Helleb.*, *Lonicera Xyl.*, and *Stratiotes*, to have been extended so far at one leap? In 'Cybele Britannica,' ii. 284, *Cynoglossum sylvaticum* is noticed as reported from Perth; but mistakes seem often to have occurred about this plant. Yet it may be urged the Perthshire habitat can hardly belong to *C. officinale*?, as both species are included in Mr. Sim's list. *Helleb. fætidus*, *Lonic. Xyl.*, and *Stratiotes*, are also reported from Province 15, but under circumstances more or less suspected by the author of the *Cybele*. The occurrence too of several foreign plants in the neighbourhood of Perth would seem to render caution all the more necessary in the present instance, especially in the case of plants which have been all three in turn questioned as natives even in the south of England.

THE CAPREOLATE FUMARIÆ OF BRITAIN.

[We have abridged the following description and remarks from Mr. C. C. Babington's valuable paper, published in the sixteenth number of the Linnæan Journal of Proceedings, February, 1860.]

Four plants have, in Britain, obtained the name of *F. capreolata*, but that name is not properly applicable to any one of our species, which are,—

1. *F. pallidiflora*, Jord.—Sepals ovate, toothed, about half as long as the corolla, and wider than the flower-tube; fruit roundish-compressed, blunt, longer than wide, smooth; the base of the fruit less broad than the tip of its stalk; bracts longer than the pedicels while the flowers are in bloom, afterwards falling short of the pedicels, which latter are reflected in the fruited plant. Flower-spikes lax, short, bearing few flowers.

Sepals soon falling, usually entire towards the joint, as broad as or broader than the corolla-tube. Corolla large, cream-coloured, tipped with red or pink; tube thick. Fruit with a short and rather narrow base,* which is very nearly as broad as the thickened tip of the pedicel; edge not regularly rounded, but the whole vertical outline rather quadrangular; apical pits small and deep. Fruit-stalks usually curved back, but sometimes only patent or divaricate.

The fruit is longer than broad, and its "base" has little of the stalk-like character of that of its nearest ally, *F. Boræi*, from which *F. pallidiflora* also differs in its paler flowers and recurved fruit-stalks.

Devon, Somerset, Glamorgan, Caernarvon, Shropshire; *i. e.* west and south-west of England [to which may be added Galway, in Ireland (A. G. More), thus far showing this plant to belong to Watson's "Atlantic" type].

2. *F. Boræi*, Jord.—Sepals broadly ovate, toothed, broader than the flower-tube, and one-third shorter than it; fruit roundish-compressed, flat-topped, broader than long, when ripe slightly wrinkled, its base narrow, not broader than the tip of its own pedicel; bracts often a little longer than the foot-stalks during

* The base of the fruit is furnished with a fleshy mass, by which it is attached to the pedicel. This, which is here spoken of as the "base," is only properly seen upon the fresh plant, though less distinctly traceable if the seeds are immersed in boiling water.

flowering, but shorter than the spreading pedicels of the fruited plant; spikes loose, short, few-flowered.

Closely allied to the preceding, but its corolla always tinged with pink. Sepals usually more toothed and larger than in *F. pallidiflora*.

Sepals attached above their base, deeply toothed at their base, often throughout; corolla rather large, pale, often purplish, with a dark purple tip.

Fruit with a narrow base, which is usually much narrower than the enlarged tip of the pedicel: the vertical outline of the fruit is rather quadrangular, with the sides rounded and the top truncate; apical pit small and deep. Fruit-stalks patent, straight, or rarely slightly reflexed.

Probably this is the *capreolata* of Smith.

Pembroke, Shropshire, Lancashire, Antrim [western, like the former?].

3. *F. confusa*, Jord.—Sepals ovate, apiculate, toothed, equal in breadth to the corolla-tube, and two-thirds shorter than it; fruit roundish-compressed, rounded at the tip, when ripe slightly wrinkled, its base very wide, evidently wider than the pedicel; bracts as long as the pedicels when in flower, but only one-half as long as the spreading pedicels of the fruited plant; spikes loose, short, few-flowered.

Sepals often persistent on the young fruit (not falling soon, as in the two preceding). Corolla rather large, less than in *F. pallidiflora*, dingy-white or pinkish, its tip, and sometimes the back, dark purple; tube rather thick. Young fruit rather obovate-acuminate.

The fleshy base is nearly as broad as the widest part of the fruit, and wider than the enlarged tip of the pedicel; it is about equally wide where it is attached to the pedicel as where it joins the true carpel. The vertical edge of the fruit is regularly rounded, and the whole outline above the enlarged base is nearly round; apical pits broad but shallow.

If examined fresh, this is easily distinguished from its allies.

Channel Isles, Cornwall, Devon [Isle of Wight (A. G. More)], Pembroke, Cardigan, Caernarvon, Lancashire, and Dublin.

4. *F. muralis*, Sond.—Sepals ovate, acute, toothed at the base, about equal in width to the tube, and two-thirds shorter than it; fruit obovate-compressed, rounded at the tip, small, and nearly

smooth, its base wide obconical, a little narrower than the tip of the pedicel; bracts of the raceme when in flower equalling the pedicels, but shorter than the erect, spreading pedicels of the fruited plant; racemes (as in all of the preceding) loose, short, few-flowered.

Plant more lax than its allies; corolla smaller than in *F. confusa*, tipped with dark blackish-purple or black. Fleshy base not nearly so broad as the fruit, narrowing conspicuously from above downwards to the pedicel, of which the tip is a little broader than the base itself. The fruit has thus a nearly pyriform outline. It is equally rounded at the top as elsewhere, and neither pointed nor retuse. The apical pits are very slightly impressed, scarcely visible; bracts often not more than half as long as the fruit-stalks.

Surrey, Shropshire, Denbigh, Yorkshire.

[We have ventured to omit some of the characters relating to the petals only, as being less observable in the dried plant, and of less importance; but those of our readers who wish to obtain a complete knowledge of those four species, must necessarily have recourse to Mr. Babington's admirable paper, from which we will only quote one more remark.]

"The only British plant which can be confounded with these *capreolatae* is the diffuse state of *F. officinalis*. This rampant form of *F. officinalis* agrees in nearly all respects with the erect and typical form of that species. Its spikes of fruit are very long and lax; its fruits are obovate-retuse, with a *very faintly marked base*, and decidedly rugose surface. Its lower petal is spatulate, being linear, with the exception of a round dilatation at the end. The fruits of the *capreolatae* are never retuse, have always a marked base and a surface which is not rugose, but sometimes slightly rough when dry. Their lower petal is *not* spatulate, but widens gradually throughout its upper half" (*l.c.* p. 161).

THE FLORA OF HARROW AND ITS VICINITY.

The following has been received from a Correspondent. It is a verbatim extract from the 'Harrow Gazette' of January 16th, 1860, and of February 3rd, of the same year.

"There is no district of our native country that cannot boast of

some objects of interest for the student of Natural History. There are, in fact, many favoured spots which possess at the same time a rare and varied Flora. In some other places, the rarity of the native wild plants amply compensates for the want of variety, while in others the native plants are neither rare nor varied. Under this last class we are unwillingly compelled to place the neighbourhood of Harrow. We are thankful to add that a restricted Flora is no sign of natural sterility, and may adduce the fertile fields around us as evidence of the fact. While the Flora of Harrow is necessarily limited by the nearly uniform character of its soil, there are accidental circumstances which restrict it still more. The greater part of the land being under grass prevents the growth of many plants which under other circumstances would flourish in the soil; and there is no reason to doubt that many plants which fifty years ago belonged to the local Flora, have been exterminated by grass farming. There have, however, been sources of gain, as well as of loss. The cattle-pools in the pasture-fields, and, above all, the canal, have introduced many aquatic and semi-aquatic plants, which could not otherwise have appeared in a Flora of this district. The most remarkable of these additions is the *Anacharis Alsinastrum*, Bab., a Canadian plant unknown to British botany before August, 1842, when it was found growing quasi-spontaneously in a small lake in Berwickshire. Since its first appearance in that spot, it has spread itself over a large portion of the canals of Great Britain, and is now to be found in many of our English rivers. Its appearance in the canal is not so very strange; but that this intriguing foreigner should (how we cannot say) have ascended the hill on which our venerable church stands, and have found for a time a local habitation in the pool in the church fields, almost surpasses belief. The fact is nevertheless true, although we cannot now convince any one of its truth by the "seeing is believing" argument; as our local authorities, in levelling the ground for the new churchyard, have buried the intruders under some twelve feet of clay. We feel assured that its wonderful powers of self-propagation have been put a stop to in one locality at least. A few other plants have found a congenial soil on the top, or at the foot, of old walls; as on the garden wall at the Grove, and in other places.

The number of Flowering Plants and Fern allies, so far as at present ascertained and catalogued below, amount to 385 species

and varieties, comprised in 207 genera and 62 families, in all amounting to about one-fourth part of the Flowering Plants and Ferns indigenous to or naturalized in Great Britain. This may appear a large proportion to many, who have not given their attention to the distribution of our native plants. It will appear very small, however, to those who have had their attention drawn to the subject; and all the more so, as the greater proportion of Harrow plants are of common occurrence throughout other districts of the country. There is no reason to doubt that a further and more systematic search will furnish considerable additions to the list appended; but at the same time deductions must be made from it on account of some plants here set down which can scarcely support a claim to be classed as indigenous to this district. But little attention has yet been paid to the cryptogamic botany of Harrow; enough, however, to assure us that it promises a less plentiful harvest than has been reaped among the Flowering Plants. At some future time it may be more practicable to give a list of the Harrow *Cryptogamia* than at present.

In addition to the list of plants given below there are some twenty or thirty species belonging to the British Flora which are found under cultivation in the neighbourhood of Harrow, but which have been so confessedly introduced for ornamental purposes, that they cannot be allowed even a doubtful place among the wild plants of Harrow.

The localities in which the plants enumerated below occur have been given generally rather than precisely. They are, however, sufficiently particular to assist in the search of the greater number. The rarer plants are not so numerous as to require much assistance in finding out the precise localities in which they occur, and which are more particularly noticed in the remarks following the list.

The following abbreviations have been adopted in designating the localities in which the plants severally occur:—H. Harrow parish generally; H. P. Harrow Park; H. W. Harrow Weald; Gh. Greenhill; K. Kenton; R. Roxeth; Gf. Greenford; P. Pinner; Hors. Horsington; W. E. Wood End. Plants marked with an asterisk are to be regarded as doubtful natives of the soil.

<i>Family.</i>	<i>Genus and Species.</i>	<i>Habitat.</i>	<i>Locality.</i>
Ranunculaceæ.	<i>Anemone nemorosa</i> , L.	Hedges & borders of fields	H.
	<i>Ranunculus aquatilis</i> , L.	Ponds	H.
	„ <i>Ficaria</i> , L.	Pasts. and plantations	H.

<i>Family.</i>	<i>Genus and Species.</i>	<i>Habitat.</i>	<i>Locality.</i>
Ranunculaceæ.	<i>Ranunculus auricomus, L.</i>	Hedges and borders of fields	H.
	„ <i>acris, L.</i>	Pastures	H.
	„ <i>repens, L.</i>	„	H.
	„ <i>bulbosus, L.</i>	Pastures	H.
	„ <i>sceleratus, L.</i>	Ponds	H.
	„ <i>arvensis, L.</i>	Cornfields	W.E.
Nymphæaceæ.	* <i>Nymphæa alba, L.</i>	Ponds	E.
	* <i>Nuphar lutea, L.</i>	„	E.
Papaveraceæ.	<i>Papaver dubium, L.</i>	Roadside	H.
	<i>Chelidonium majus, L.</i>	Waste ground	H.
Fumariaceæ.	<i>Corydalis lutea, DC.</i>	Old walls	H.
Cruciferae.	<i>Coronopus didyma, Sm.</i>	Gardens and roadsides	H.
	<i>Capsella Bursa-pastoris, DC.</i>	„	H.
	<i>Lepidium campestre, Br.</i>	Cornfields	W.E.
	* <i>Armoracia rusticana, Baumg.</i>	Waste ground	H.
	<i>Draba verna, L.</i>	Dry pastures	HOBS.
	<i>Cardamine amara, L.</i>	Canal	GF.
	„ <i>pratensis, L.</i>	Pastures	H.
	„ <i>hirsuta, L.</i>	Banks, etc.	H.
	<i>Barbarea vulgaris, Br.</i>	Borders and fields	E.
	„ <i>arcuata, Reich.</i>	„	E.
	<i>Nasturtium officinale, Br.</i>	Ponds	H.
	„ <i>amphibium, Br.</i>	Canal	GF.
	<i>Sisymbrium officinale, Scop.</i>	Waste places	H.
	<i>Erysimum Alliaria, L.</i>	Hedge-banks	H.
	* <i>Cheiranthus Cheiri, L.</i>	Old wall	H.
	<i>Brassica Rapa, L.</i>	Borders of fields	H.
	„ <i>Napus, L.</i>	„	W.E.
	<i>Sinapis arvensis, L.</i>	Waste places	H.
	„ <i>nigra, L.</i>	Cornfields	W.E.
	<i>Raphanus Raphanistrum, L.</i>	Borders of fields	E.
Violaceæ.	<i>Viola odorata, L.</i>	Banks	H.
	„ <i>alba, Bess.</i>	„	H.
	„ <i>canina, (Ger.) Sm.</i>	„	H.
	„ <i>tricolor, L.</i>	Gardens	H.
Polygalaceæ.	<i>Polygala vulgaris, L.</i>	Dry banks	H.W.
Caryophyllaceæ.	<i>Silene inflata, Sm.</i>	Borders of fields	E.
	<i>Lychnis Flos-cuculi, L.</i>	Meadows	E.
	„ <i>diurna, Sibth.</i>	Borders of fields	H.
	<i>Sagina procumbens, L.</i>	Old walls	H.
	<i>Spergula arvensis, L.</i>	Gardens	H.
	<i>Arenaria serpyllifolia, L.</i>	Cornfields	W.E.
	„ <i>trinervis, L.</i>	Shady places	H.P.
	<i>Stellaria media, With.</i>	Roadsides	H.
	„ <i>holostea, L.</i>	Hedges	H.
	„ <i>graminea, L.</i>	Pastures	H.
	<i>Cerastium glomeratum, Thuit.</i>	„	H.
	„ <i>triviale, Link.</i>	„	H.
Malvaceæ.	<i>Malva sylvestris, L.</i>	Waste places	H.

<i>Family.</i>	<i>Genus and Species.</i>	<i>Habitat.</i>	<i>Locality.</i>
Malvaceæ.	<i>Malva rotundifolia, L.</i>	Waste places	H.
Tiliaceæ.	* <i>Tilia parvifolia, Ehrh.</i>	Plantations	H.
Hypericaceæ.	<i>Hypericum perforatum, L.</i>	Roadsides	H.
	„ <i>dubium, Leers.</i>	„	H.
	„ <i>quadrangulum, L.</i>	„	H.
	„ <i>hirsutum, L.</i>	„	H.
Aceraceæ.	<i>Acer campestre, L.</i>	Hedgerows	H.
	„ <i>Pseudoplatanus, L.</i>	„	H.
Geraniaceæ.	* <i>Geranium phæum, L.</i>	Meadow	H.
	„ <i>molle, L.</i>	Banks	H.
	„ <i>dissectum, L.</i>	„	H.
	„ <i>robertianum, L.</i>	Hedge-banks	H.
Celastraceæ.	<i>Euonymus europæus, L.</i>	Hedges	GF.
Rhamnaceæ.	<i>Rhamnus Frangula, L.</i>	Plantations	P.
Leguminiferæ.	<i>Ulex europæus, L.</i>	Roadsides	H.
	<i>Ononis arvensis, L.</i>	Common	H.W.
	<i>Medicago lupulina, L.</i>	Roadsides	R.
	<i>Trifolium repens, L.</i>	Pastures	H.
	„ <i>pratense, L.</i>	„	H.
	„ <i>minus, Relk.</i>	„	H.
	<i>Lotus corniculatus, L.</i>	„	H.
	„ <i>major, L.</i>	Roadsides	H.
	<i>Vicia sativa, L.</i>	Pastures	H.
	„ <i>angustifolia, R.</i>	„	GH.
	„ <i>sepium, L.</i>	Banks	HORS.
	„ <i>hirsuta, Koch.</i>	Meadows	R.
	„ <i>tetrasperma, Koch.</i>	„	R.
	<i>Lathyrus Nissolia, L.</i>	Brookside	K.
	„ <i>pratensis, L.</i>	Meadows	H.
	<i>Orobis tuberosus, L.</i>	Pastures	H.
Rosaceæ.	<i>Prunus spinosa, L.</i>	Hedges	H.
	„ <i>insititia, L.</i>	„	R.
	* „ <i>Padus, L.</i>	Plantations.	H.P.
	* „ <i>Cerasus, L.</i>	„	H.
	<i>Spiræa Ulmaria, L.</i>	Ditches	H.
	<i>Geum urbanum, L.</i>	Shady places	H.P.
	<i>Agrimonia Eupatoria, L.</i>	Roadsides	H.
	<i>Potentilla anserina, L.</i>	„	H.
	„ <i>reptans.</i>	„	H.
	„ <i>Tormentilla, Schk.</i>	„	R.
	„ <i>Fragariastrum, Ehrh.</i>	Borders of fields	H.
	<i>Fragaria vesca, L.</i>	Banks	H.
	<i>Rubus Idæus, L.</i>	Shady places	H.B.
	„ <i>thyrsoides, Wimm.</i>	Hedges	R.
	„ <i>discolor, W. & N.</i>	„	H.
	„ <i>leucostachys, Sm.</i>	„	H.
	„ <i>vestitus.</i>	Shady places	H.P.
	„ <i>hystrix, Weihe.</i>	„	H.P.
	„ <i>Radula, Weihe.</i>	„	W.E.
	„ <i>rosaceus, Weihe.</i>	Hedges.	W.E.

Family.	Genus and Species.	Habitat.	Locality.
Rosaceæ.	<i>Rubus scaber</i> , <i>Weih.</i>	Hedges	H.
	„ <i>corylifolius</i> , <i>Sm.</i>	„	H.
	„ <i>sublustris</i> , <i>Lees.</i>	„	P.
	„ <i>conjungens</i> , <i>Bab.</i>	„	R.
	„ <i>purpureus</i> , <i>Bab.?</i>	„	H.
	„ <i>altheifolius</i> , <i>Horst.</i>	„	H.
	„ ?	„	B.
	„ ?	„	P.
	„ ?	„	P.
	„ ?	„	P.
	<i>Rosa villosa</i> , <i>L.</i>	Borders of fields	GH.
	„ <i>canina</i> , <i>L.</i>	Hedges	H.
	„ <i>sarmentacea</i> , <i>Woods.</i>	„	H.
	„ <i>surculosa</i> , <i>Woods.</i>	„	H.
	„ <i>Forsteri</i> , <i>Sm.</i>	„	H.
	„ <i>arvensis</i> , <i>L.</i>	„	H.
	<i>Cratægus Oxyacantha</i> , <i>L.</i>	„	H.
	„ <i>monogyna</i> .	„	R.
	<i>Pyrus Malus</i> , <i>L.</i>	„	H.
	* „ <i>Aucuparia</i> , <i>Gærtn.</i>	Plantations	H.P.
Onagraceæ.	<i>Epilobium hirsutum</i> , <i>L.</i>	Ditches	R.
	„ <i>parviflorum</i> , <i>Schr.</i>	Canal	GF.
	„ <i>montanum</i> , <i>L.</i>	Banks	H.
	„ <i>tetragonum</i> , <i>L.</i>	Ditches	H.
Haloragiacæ.	<i>Circæa lutetiana</i> , <i>L.</i>	Shady places	H.P.
	<i>Myriophyllum spicatum</i> , <i>L.</i>	Canal and ponds	GF.
	<i>Callitriche verna</i> , <i>L.</i>	Ponds	H.
	„ <i>platycarpa</i> , <i>Kuntz.</i>	„	H.
	<i>Ceratophyllum demersum</i> , <i>L.</i>	Canal	H. & GF.
Cucurbitaceæ.	<i>Bryonia dioica</i> , <i>L.</i>	Hedges	H.
Grossulariaceæ.	<i>Ribes rubrum</i> , <i>L.</i>	Thickets	H.P.
	„ <i>Grossularia</i> , <i>L.</i>	„	H.
Crassulaceæ.	<i>Sedum acre</i> , <i>L.</i>	Old walls	H.
	„ <i>reflexum</i> , <i>L.</i>	„	H.
	<i>Sempervivum tectorum</i> , <i>L.</i>	Roofs	H.
Araliaceæ.	<i>Hedera Helix</i> , <i>L.</i>	Hedges and Thickets	H.
Cornaceæ.	<i>Cornus sanguinea</i> , <i>L.</i>	Hedges	H.
Umbelliferæ.	<i>Conium maculatum</i> , <i>L.</i>	Roadsides	H.
	* <i>Petroselinum sativum</i> , <i>Hoff.</i>	Old walls	H.
	<i>Sison Amomum</i> , <i>L.</i>	Ditches	H.
	<i>Ægopodium Podagraria</i> , <i>L.</i>	Hedge-banks	H.
	<i>Bunium flexuosum</i> , <i>With.</i>	Banks	H.
	<i>Pimpinella Saxifraga</i> , <i>L.</i>	Meadows	H.
	<i>Sium angustifolium</i> , <i>L.</i>	Canal	GF.
	<i>Æthusa Cynapium</i> , <i>L.</i>	Waste ground	H.
	<i>Silaus pratensis</i> , <i>Bess.</i>	Meadows	H.
	<i>Angelica sylvestris</i> , <i>L.</i>	Damp places	P.
	<i>Pastinaca sativa</i> , <i>L.</i>	Pastures	R.
	<i>Heracleum Sphondylium</i> , <i>L.</i>	Borders of fields	H.
	<i>Daucus Carota</i> , <i>L.</i>	Meadows	H.

<i>Family.</i>	<i>Genus and Species.</i>	<i>Habitat.</i>	<i>Locality.</i>
Umbelliferae.	<i>Torilis Anthriscus</i> , <i>Gærtn.</i>	Banks and hedges	H.
	<i>Scandix Pecten</i> , <i>L.</i>	Cornfields	W.E. & K.
	<i>Anthriscus sylvestris</i> , <i>Hoffm.</i>	Hedge-banks	H.
	<i>Chærophyllum temulentum</i> , <i>L.</i>	"	H.
Caprifoliaceæ.	<i>Sambucus nigra</i> , <i>L.</i>	Hedges	H.
	<i>Viburnum Opulus</i> , <i>L.</i>	"	W.E.
	* " <i>Lantana</i> , <i>L.</i>	Plantations	H.P.
	<i>Lonicera Periclymenum</i> , <i>L.</i>	Hedges	H.
	<i>Galium verum</i> , <i>L.</i>	Borders of fields	K. & R.
	" <i>uliginosum</i> , <i>L.</i>	Ponds	R.
	" <i>saxatile</i> , <i>L.</i>	Dry pastures	H.W.
	" <i>Mollugo</i> , <i>L.</i>	Hedge-banks	P.
Valerianaceæ.	" <i>Aparine</i> , <i>L.</i>	"	H.
	<i>Fedia olitoria</i> , <i>Vahl.</i>	"	R.
Dipsacæ.	<i>Dipsacus sylvestris</i> , <i>L.</i>	Roadsides	H.
	<i>Scabiosa succisa</i> , <i>L.</i>	Pastures	P.
	<i>Knautia arvensis</i> , <i>Coult.</i>	"	GF.
Compositæ.	<i>Tragopogon pratensis</i> , <i>L.</i>	Meadows	R.
	" <i>porrifolius</i> , <i>L.</i>	Roadsides	K.
	<i>Helminthia echinoides</i> , <i>Gærtn.</i>	"	H.
	<i>Thrinicia hirta</i> , <i>Roth.</i>	Pastures	H.
	<i>Apargia autumnalis</i> , <i>Willd.</i>	"	H.
	<i>Hypochoeris radicata</i> , <i>L.</i>	"	H.
	<i>Lactuca virosa</i> , <i>L.</i>	Hedge-banks	GF. P. & S.
	<i>Sonchus arvensis</i> , <i>L.</i>	Cornfields	W.E. & R.
	" <i>asper</i> , <i>Hoffm.</i>	Roadsides	H.
	" <i>oleraceus</i> , <i>L.</i>	"	H.
	<i>Taraxacum officinale</i> , <i>Wigg.</i>	"	H.
	<i>Lapsana communis</i> , <i>L.</i>	Hedge-banks	H.
	<i>Arctium majus</i> , <i>Schk.</i>	Thickets and banks	H. & W.E.
	<i>Carduus Marianus</i> , <i>L.</i>	Gardens	R.
	" <i>lanceolatus</i> , <i>L.</i>	Roadsides	H.
	" <i>palustris</i> , <i>L.</i>	Damp pastures	H.
	" <i>arvensis</i> , <i>Curt.</i>	Pastures	H.
	<i>Centaurea nigra</i> , <i>L.</i>	"	H.
	<i>Bidens cernua</i> , <i>L.</i>	Ditches and pools	H.
	" <i>tripartita</i> , <i>L.</i>	"	H.
	<i>Tanacetum vulgare</i> , <i>L.</i>	Waste places	H.
	<i>Gnaphalium uliginosum</i> , <i>L.</i>	Roadsides	P.
	<i>Tussilago Farfara</i> , <i>L.</i>	Cornfields	W.E.
	<i>Senecio vulgaris</i> , <i>L.</i>	Waste places	H.
	" <i>erucaefolius</i> , <i>L.</i>	Roadsides	H.
	" <i>aquaticus</i> , <i>Huds.</i>	"	H.
	<i>Pulicaria dysenterica</i> , <i>Gærtn.</i>	"	H.
	<i>Bellis perennis</i> , <i>L.</i>	Pastures	H.
	<i>Chrysanthemum Leucanthemum</i> , <i>L.</i>	"	H.
	<i>Pyrethrum Parthenium</i> , <i>Sm.</i>	Waste ground	H.
	" <i>inodorum</i> , <i>Sm.</i>	"	H.
	<i>Matricaria Chamomilla</i> , <i>L.</i>	"	H.

<i>Family.</i>	<i>Genus and Species.</i>	<i>Habitat.</i>	<i>Locality.</i>
Compositæ.	<i>Achillea Ptarmica</i> , <i>L.</i>	Waste ground	GF.
	<i>Achillea Millefolium</i> , <i>L.</i>	Roadsides	H.
Ericaceæ.	<i>Erica Tetralix</i> , <i>L.</i>	Heaths	H.W.
	<i>Calluna vulgaris</i> , <i>Salisb.</i>	"	H.W.
Ulicaceæ.	<i>Ilex aquifolium</i> , <i>L.</i>	Thickets	H.
Jasminaceæ.	<i>Ligustrum vulgare</i> , <i>L.</i>	Hedges	H.
	<i>Fraxinus excelsior</i> , <i>L.</i>	Hedgerows	H.
Apocynaceæ.	<i>Vinca minor</i> , <i>L.</i>	Roadside	H.
Convolvulaceæ.	<i>Convolvulus arvensis</i> , <i>L.</i>	Borders of fields	H.
	" <i>sepium</i> , <i>L.</i>	Hedges	H.
Solanaceæ.	<i>Solanum nigrum</i> , <i>L.</i>	Waste places	H.
	" <i>Dulcamara</i> , <i>L.</i>	Hedges	R.
Scrophulariaceæ.	<i>Verbascum Thapsus</i> , <i>L.</i>	Near gardens	R.
	<i>Veronica arvensis</i> , <i>L.</i>	Cornfields	W.E.
	" <i>serpyllifolia</i> , <i>L.</i>	Pastures	H.
	" <i>Beccabunga</i> , <i>L.</i>	Ditches	H.
	" <i>montana</i> , <i>L.</i>	Shady places -	H.P.
	" <i>Chamædrys</i> , <i>L.</i>	Borders of fields	H.
	" <i>hederæfolia</i> , <i>L.</i>	"	H.
	" <i>agrestis</i> , <i>L.</i>	Roadsides	H.
	" <i>polita</i> , <i>Fries.</i>	Gardens	H.
	" <i>Buxbaumii</i> , <i>Ten.</i>	Canal towing-path	GF.
	<i>Bartsia Odontites</i> , <i>Huds.</i>	Roadsides	P.
	<i>Rhinanthus Crista-galli</i> , <i>L.</i>	Meadows	R.
	<i>Pedicularis sylvatica</i> , <i>L.</i>	Heaths	H.W.
	<i>Scrophularia nodosa</i> , <i>L.</i>	Ditches	H.
	<i>Digitalis purpurea</i> , <i>L.</i>	Dry banks	H.W.
Verbenaceæ.	* <i>Antirrhinum majus</i> , <i>L.</i>	Old walls	H.
	<i>Verbena officinalis</i> , <i>L.</i>	Roadsides	GF.
Lamiaceæ.	<i>Lycopus europæus</i> , <i>L.</i>	Ponds	H.
	<i>Mentha piperita</i> , <i>L.</i>	Side of canal	GF.
	" <i>aquatica</i> , <i>L.</i>	"	GF.
	" <i>pratensis</i> , " <i>Sole.</i> "	Roadsides	P.
	" <i>arvensis</i> , <i>L.</i>	"	P.
	<i>Ajuga reptans</i> , <i>L.</i>	Shady places	H.
	<i>Ballota nigra</i> , <i>L.</i>	Borders of fields	H.
	<i>Lamium Galeobdolon</i> , <i>Crantz.</i>	Hedge-banks	HORS.
	" <i>album</i> , <i>L.</i>	Borders of fields	H.
	" <i>purpureum</i> , <i>L.</i>	Waste ground	H.
	<i>Stachys palustris</i> , <i>L.</i>	Side of canal	GF.
	" <i>sylvatica</i> , <i>L.</i>	Borders of fields	H.
	<i>Glechoma hederacea</i> , <i>L.</i>	Hedge-banks	H.
	<i>Prunella vulgaris</i> , <i>L.</i>	Pastures	H.
	<i>Scutellaria galericulata</i> , <i>L.</i>	Side of canal	GF.
Boraginaceæ.	<i>Myosotis palustris</i> , <i>With.</i>	"	GF.
	" <i>cæspitosa</i> , <i>Schultz.</i>	Pastures	GF.
	" <i>sylvatica</i> , <i>Ehrh.</i>	Roadsides	GF.
	" <i>arvensis</i> , <i>Hoffm.</i>	"	GF.
	" <i>versicolor</i> , <i>Lehm.</i>	Pastures	R.

<i>Family.</i>	<i>Genus and Species.</i>	<i>Habitat.</i>	<i>Locality.</i>
Primulaceæ.	<i>Primula vulgaris</i> , <i>Huds.</i>	Hedge-banks	H.
	<i>Primula elatior</i> , <i>Jacq.</i>	Pastures	H.
	„ <i>veris</i> , <i>L.</i>	„	H.
	<i>Lysimachia Nummularia</i> , <i>L.</i>	„	H.
	<i>Anagallis arvensis</i> , <i>L.</i>	Waste ground	H.
Plantaginaceæ.	<i>Plantago major</i> , <i>L.</i>	Roadsides	H.
	„ <i>media</i> , <i>L.</i>	Pastures	GF.
	„ <i>minor</i>	Meadows	H.
Chenopodiaceæ.	<i>Chenopodium polyspermum</i>	Waste ground	H.
	„ <i>rubrum</i> , <i>L.</i>	„	H.
	„ <i>album</i> , <i>L.</i>	„	H.
	„ <i>ficifolium</i> , <i>Sm.</i>	„	K.
	„ <i>glaucum</i> , <i>L.</i>	„	K.
	„ <i>Bonus-Henricus</i> , <i>L.</i>	„	H.
	<i>Atriplex Babingtonii</i> , <i>Woods.</i>	„	R.
	„ <i>hastata</i> , <i>L.</i>	„	H.
	„ <i>deltoidea</i> , <i>Bab.</i>	„	H.
	„ <i>patula</i> , <i>L.</i>	„	H.
	„ <i>angustifolia</i> , <i>Sm.</i>	Roadsides	W.E.
	„ <i>erecta</i> , <i>Huds.</i>	Cornfields	W.E.
Polygonaceæ.	<i>Polygonum lapathifolium</i> , <i>L.</i>	Waste places	H.
	„ <i>Persicaria</i> , <i>L.</i>	„	H.
	„ <i>Hydropiper</i> , <i>L.</i>	Ditches	H.
	„ <i>aviculare</i> , <i>L.</i>	Roadsides	H.
	„ <i>Convolvulus</i> , <i>L.</i>	Cornfields	W.E.
	<i>Rumex Hydrolapathum</i> , <i>H.</i>	Canal	GF.
	„ <i>crispus</i> , <i>L.</i>	Roadsides	H.
	„ <i>obtusifolius</i> , <i>L.</i>	„	H.
	„ <i>conglomeratus</i> , <i>Mur.</i>	„	H.
	„ <i>Acetosa</i> , <i>L.</i>	Pastures	H.
Euphorbiaceæ.	„ <i>Acetosella</i> , <i>L.</i>	Dry banks	H.
	<i>Euphorbia helioscopia</i> , <i>L.</i>	Gardens	H.
	„ <i>exigua</i> , <i>L.</i>	Cornfields	W.E.
	„ <i>Peplus</i> , <i>L.</i>	Gardens	H.
	„ <i>Lathyris</i> , <i>L.</i>	„	R.
Urticaceæ.	„ <i>amygdaloides</i> , <i>L.</i>	Hedge-banks	R. & HOR.
	<i>Mercurialis perennis</i> , <i>L.</i>	„	R. & HOR.
	<i>Urtica urens</i> , <i>L.</i>	Waste ground	H.
	„ <i>dioica</i> , <i>L.</i>	Hedge-banks, etc.	H.
	<i>Humulus Lupulus</i> , <i>L.</i>	Hedges	H.
	<i>Ulmus montana</i> , <i>Sm.</i>	Hedgerows	P.
	„ <i>suberosa</i> , <i>Ehrh.</i>	„	H.
Amentiferae.	<i>Quereus Robur</i> , <i>L.</i>	„	H.
	<i>Fagus sylvatica</i> , <i>L.</i>	Plantation	H.
	* <i>Carpinus Betulus</i> , <i>L.</i>	„	H.
	<i>Corylus Avellana</i> , <i>L.</i>	Hedgerows	H.
	* <i>Betula alba</i> , <i>L.</i>	Plantations	H.
	* <i>Populus alba</i> , <i>L.</i>	„	H.
	<i>Salix fragilis</i> , <i>L.</i>	Hedgerows	H.
	„ <i>decipiens</i> , <i>Hoffm.</i>	„	R.

<i>Family.</i>	<i>Genus and Species.</i>	<i>Habitat.</i>	<i>Locality.</i>
Amentiferæ.	<i>Salix russelliana, Sm.</i>	Hedgerows	H.
	„ <i>viminalis, L.</i>	„	H.
	„ <i>smithiana, Eng. Bot.</i>	„	R.
	„ <i>cinerea, L.</i>	„	H.
	„ <i>aquatica, Sm.</i>	„	R.
	„ <i>oleifolia, Sm.</i>	„	R.
	„ <i>caprea, L.</i>	„	K.
Coniferæ.	<i>Taxus baccata, L.</i>	Various	H.
Orchidaceæ.	<i>Orchis Morio, L.</i>	Pastures	R.
	„ <i>maculata, L.</i>	„	R.
Iridaceæ.	<i>Iris Pseudacorus, L.</i>	Canal	GF.
Amaryllidaceæ.	* <i>Narcissus Pseudonarcissus, L.</i>	Meadows	R.
Liliaceæ.	<i>Hyacinthus nonscriptus, L.</i>	Borders of fields	H.
Trilliaceæ.	<i>Paris quadrifolia, L.</i>	Shady places	H.W.
Tamaceæ.	<i>Tamus communis, L.</i>	Hedges	H.
Hydrocharidaceæ.	* <i>Anacharis Alsinastrum, B.</i>	Pond and canal	H. & GF.
Alismaceæ.	<i>Alisma Plantago, L.</i>	„	H. & GF.
	<i>Sagittaria sagittifolia, L.</i>	Canal	GF.
	<i>Butomus umbellatus, L.</i>	Pond and canal	H. & GF.
	<i>Triglochin palustre, L.</i>	Side of canal	GF.
Fluviales.	<i>Potamogeton densus, L.</i>	Canal	GF.
	„ <i>pusillus, L.</i>	„	GF.
	„ <i>crispus, L.</i>	Pond and canal	H. & GF.
	„ <i>perfoliatus, L.</i>	Canal	GF.
	„ <i>natans, L.</i>	Ponds	H.
Araceæ.	<i>Lemna minor, L.</i>	„	H.
	„ <i>gibba, L.</i>	„	R.
	„ <i>polyrhiza, L.</i>	„	H.
	„ <i>trisulca, L.</i>	„	H.
	<i>Arum maculatum, L.</i>	Banks	H.
	<i>Sparganium ramosum, Huds.</i>	Ponds	R.
	<i>Typha latifolia, L.</i>	Canal	GF.
	<i>Juncus conglomeratus.</i>	Ditches	H.
Juncaceæ.	„ <i>effusus, L.</i>	„	H.
	„ <i>glaucus, Sibth.</i>	Roadsides	H.
	<i>Luzula campestris, "B."</i>	Pastures	H.
Cyperaceæ.	<i>Carex muricata, L.</i>	„	H.
	„ <i>remota, L.</i>	Damp places	H.
	„ <i>divulsa, Good.</i>	„	R.
	„ <i>vulpina, L.</i>	Ditches	R. & K.
	„ <i>sylvatica, Huds.</i>	Shady places	H.P.
	„ <i>hirta, L.</i>	Pastures	K.
	„ <i>paludosa, Good.</i>	Side of canal	GF.
	„ <i>riparia, Curtis.</i>	„	GF.
Gramineæ.	<i>Anthoxanthum odoratum, L.</i>	Meadows	H.
	<i>Phleum pratense, L.</i>	„	H.
	<i>Alopecurus pratensis, L.</i>	„	H.
	„ <i>geniculatus, L.</i>	Borders of pools	R.

<i>Family.</i>	<i>Genus and Species.</i>	<i>Habitat.</i>	<i>Locality.</i>
Gramineæ.	<i>Alopecurus agrestis, L.</i>	Meadows	H.
	<i>Agrostis vulgaris, With.</i>	Pastures	H.
	„ <i>alba, L.</i>	„	H.
	<i>Aira cæspitosa, L.</i>	Borders of fields	H.
	<i>Avena flavescens, L.</i>	Meadows	H.
	<i>Arrhenatherum avenaceum, Beau.</i>	Hedge-banks	H.
	<i>Holcus lanatus, L.</i>	Meadows	H.
	„ <i>mollis, L.</i>	Borders of fields	R.
	<i>Melica uniflora, Retz.</i>	Shady banks	H.P.
	<i>Glyceria aquatica, Sm.</i>	Side of canal	GF.
	„ <i>fluitans, Br.</i>	Pools	H.
	„ <i>rigida, Sm.</i>	Old walls	H.
	<i>Poa annua, L.</i>	Waste ground	H.
	„ <i>pratensis, L.</i>	Meadows	H.
	„ <i>trivialis, L.</i>	„	H.
	<i>Briza media, L.</i>	„	H.
	<i>Cynosurus cristatus, L.</i>	Pastures	H.
	<i>Dactylis glomerata, L.</i>	Meadows	H.
	<i>Festuca Pseudomyurus.</i>	Old walls	H.
	„ <i>pratensis, Huds.</i>	Meadows	H.
	„ <i>liolacea, Huds.</i>	„	H.
	<i>Bromus giganteus, L.</i>	Shady places	H.P.
	„ <i>asper, L.</i>	Borders of fields	R.
	„ <i>sterilis, L.</i>	Hedge-banks	H.
	„ <i>mollis</i>	Meadows	H.
	<i>Brachypodium sylvaticum, Beau.</i>	Borders of fields	H.
	<i>Triticum repens, L.</i>	„	H.
	<i>Lolium perenne, L.</i>	Meadows	H.
	<i>Hordeum pratense, Huds.</i>	„	H.
	„ <i>murinum, L.</i>	Roadsides	H.
Filices.	<i>Polypodium vulgare, L.</i>	Hedge-banks	P.
	<i>Aspidium aculeatum, Sw.</i>	„	P.
	„ <i>angulare, Sm.</i>	„	P.
	<i>Lastrea Filix-mas, Prest.</i>	„	H.
	<i>Scolopendrium vulgare, L.</i>	„	P.
Equisetaceæ.	<i>Ophioglossum vulgatum, L.</i>	Meadows	H.
	<i>Equisetum arvense, L.</i>	Fields and hedge-banks	H.

The review of the above catalogue does not present many points which demand special notice. It is, in fact, more remarkable for its omissions than for its contents. One-third of the families included in the Flowering Plants of Great Britain have no representatives in the local Flora. Three-fifths of the British genera, and three-fourths of the British species, are also unrepresented. Further and closer search will doubtless add considerably to the above list, but it is feared not to an extent sufficient to alter materially the above proportions. Among the rarer plants occurring

in the neighbourhood may be noticed the yellow Fumitory, *Corydalis lutea*, which occurs on old walls at Miss Hill's, above the Cricket Ground, and in a few other places. This, though well established in its present habitat, was most likely introduced as a garden flower. The Grass Vetch, *Lathyrus Nissolia*; the vil-
lous Rose, *Rosa villosa*, a native of the northern counties, but apparently indigenous in a field near the railway station at Greenhill. Parsley, *Petroselinum sativum*, on old garden walls in the rear of houses in Crown Street. Bastard Stone Parsley, *Sison Amomum*, and Pepper Saxifrage, *Silau pratensis*, occur plentifully: though in the more northern parts of Great Britain they are comparatively rare. The common parsnip, *Pastinaca sativa*, a chalk plant, is found sparingly. The Salsafy, *Tragopogon porrifolius*, is found in several spots in the neighbourhood of Greenhill and Kenton. The Ox-tongue, *Helminthia echiioides*, is tolerably frequent by the waysides. The hairy Thrinicia, *Thrinicia hirta*, is common in pastures, and especially in the Cricket Ground, the south end of which is in summer studded with its bright star-like flowers. The acrid Lettuce, *Lactuca virosa*, a poisonous plant of unfrequent occurrence, is very plentiful in some parts of the neighbourhood, especially in the Greenford Lane and Pinner road. The Mountain Speedwell, *Veronica montana*, is abundant in Harrow Park. Buxbaum's Speedwell, *Veronica Buxbaumii*, is found sparingly near Perivale. The great Snapdragon, *Antirrhinum majus*, is very abundant on the garden wall at the Grove. Vervain, *Verbena officinalis*, may be found near the canal bridge in the Greenford road. The narrow-leaved Mint, *Mentha pratensis*, grows on the roadside leading to Pinner. Archangel, *Lamium Galeobdolon*, occurs on the hedge-bank in Horsington Lane. The Oxlip, *Primula elatior*, is occasionally found in the meadows. The hoary Plantain, *Plantago media*, is to be found in the pastures near the canal at Greenford. The fig-leaved and oak-leaved Goosefoot, *Chenopodium ficifolium* and *glaucum*, occur in a farmyard near Kenton. Caper Spurge, *Euphorbia Lathyris*, springs spontaneously in gardens about Roxeth. Wood Spurge, *Euphorbia amygdaloides*, occurs on hedge-banks in Horsington Lane, and near the footpath leading from Roxeth to Pinner Lane. The Hornbeam, *Carpinus Betulus*, is not unfrequent, but only in places which render its claim to spontaneous growth questionable. The same may be said of the Abele, *Populus alba*. Harrow is

peculiarly barren of the Orchis tribe, of which there are only two representatives. The rarer of these is the green-winged Meadow Orchis, *Orchis Morio*. The Lily tribe is no better represented, the Blue-bell or wild Hyacinth, *Hyacinthus nonscriptus*, being the only plant of that family in our local Flora. The Arrow-head, *Sagittaria sagittifolia*, the flowering Rush, *Butomus umbellatus*, and the opposite-leaved Pondweed, *Potamogeton densus*, are found in the canal. The greater, and gibbous Duckweed, *Lemna polyrrhiza* and *gibba*, are tolerably common in pools. The grey Sedge, *Carex divulsa*, is the only plant of its family in this neighbourhood which can advance a claim to be set down as rare. It occurs at the edge of a pool in Roxeth. The hard Meadow Grass, *Glyceria rigida*, and the wall Fescue Grass, *Festuca Pseudomyurus*, both occur on the garden wall at the Grove. The tall Brome Grass, *Bromus giganteus*, occurs in quantity in Harrow Park. Willdenow's Fern, *Aspidium angulare*, grows in the lane leading from Pinner to Harrow Weald. The Adder's-tongue, *Ophioglossum vulgatum*, is to be found in the moist parts of the Eighty Acres.

FLEMING SOCIETY OF NATURAL SCIENCE.

New College, Edinburgh.

This Society met on the 21st February, and the following were the papers communicated:—

1. Palæontological Botany, by William Carruthers, Esq., F.R.P.S.E. In this paper the author gave an account of the different conditions in which fossil plants are found, and remarked that as it is only the harder tissues that are preserved, the probability is that we have but a very imperfect record of ancient plant-life. He then gave a rapid sketch of the different plants found in each of the great geologic formations, and summed up by urging the testimony of the rocks as fatally objectionable to Mr. Darwin's recent theory, for they tell of no condition of life represented by simple organisms, which gradually by differentiation become altered to higher beings. But they record the appearance on the earth at the same time of many highly developed representations of different subdivisions of the animal kingdom, and the earliest certain remains of plants testify to the

simultaneous appearance of the great divisions of the animal kingdom. Besides these, other difficulties would be suggested by a little reflection, such as the unexpected stop in the development of some organisms, as in the *Diatomaceæ*, the earliest forms of which are as perfect in every particular as those now living ; or the retrograde development in others, as in the singularly diminutive Lycopods, descended in accordance with the "selective power of nature" from the giant *Lepidodendrons* of the coal measures.

At the close of this paper, Professor Bialloblotzky, of Göttingen, was introduced to the Society, and amongst other remarks said that he did not think that Lyell's superficial division of the Tertiary system would stand long, now that the more scientific division of Dr. Fleming had been published.

After two papers on geology, Mr. Sadler read two lyrical effusions communicated by Professor Balfour from Mr. James Hardie, the first of which was an ode to the *Draba verna*, and the second a translation of Sibbald's ode to *Rosa ciphiana*. Mr. Robert Brown then read a note concerning the recent capture of *Corrynactus viridis* on the coast of Caithness ; and after the transaction of some business the Society adjourned.

On March 6, the Society held its usual fortnightly meeting, John Sadler, Esq., president, when the following were the communications read :—

1. Part 1 of a paper on the Algæ in relation to Medicine, the Arts, Manufactures, and Domestic Economy, by Robert Brown, Esq., F.R.P.S.E. The paper treated of the medical properties of the Algæ of various countries, and their economic application to the arts and manufactures ; but as Part 2 will be read at the next meeting, a fuller report of the paper will then be given.

2. Thermometrical Observations made in the Royal Botanic Garden, Edinburgh, from 1854 to 1860, by Mr. Wm. R. M'Nab, in remarks on which the Rev. James Stewart said that he thought it would be found that the temperature of this country followed a regular curve, as most certainly the data afforded by the present paper would lead us to suppose.

3. Botanical Rambles, being a Sketch of an Excursion to Strathmiglo, Balvaird Castle, Glen Farg, and Bridge of Earn, by John Sadler, Esq., Sec.B.S.E. In this paper the author gave a graphic description of one of Professor Balfour's class excursions, and noticed among the various plants found the *Cerastium arvense*,

occurring near Strathmiglo, and the *Malva moschata*, *Dianthus deltoides*, *Geranium phæum*, *Scrophularia vernalis*, *Lychnis Viscaria*, and *Cystopteris fragilis*, all of which, though comparatively rare in the neighbourhood of Edinburgh, were found abundantly in Glen Farg. Specimens of the plants were exhibited, and Mr. Sadler at the same time presented to the herbarium a collection of Lichens and Mosses made by him on the Breadalbane mountains in August last. He also exhibited a collection of Lichens which had been collected by William Murray, Esq., in California, and remarked that it was somewhat singular that they were all British species except one, and the most of them common to Scotland. Mr. Sadler also exhibited a remarkable specimen of a Fungus, growing between two plates of glass. After the transaction of some business the Society adjourned till March 20th.

THIRSK NATURAL HISTORY SOCIETY.

Botanical Exchange Club.

The monthly meeting of this Society was held on the evening of Monday, the 5th of March. Mr. J. G. Baker communicated the following notices.

“*Violet intermediate between hirta and odorata.* A Violet with the following characters occurs on hedge-banks and by the side of the river Yare, in dry sandy soil, over the millstone grit, near the village of Tanfield, in mid-west Yorkshire. Root-stock strong, thick, scaly, subligneous, branched, sending out creeping lateral stolons, which sometimes take root and bear flowers. Leaves deeply cordate, with a narrow basal sinus when the plant is in flower, the length usually being somewhat greater than the breadth, as broad, somewhat pointed, finely inciso-crenate, more or less hairy upon both sides, with densely hairy petioles; when mature, blunter and with a more open sinus, less hairy and with less hairy petioles. Stipules large, lanceolate, with short glandular ciliations. Peduncles almost invariably longer than the petioles, and leaves at flowering-time finely pubescent below, sometimes subglabrous towards their summits, with linear-lanceolate, glandular bracts. Flowers bluish-violet, white within, large, open, faintly odorous. Sepals obtuse, glabrous or slightly

ciliated at the margin towards the base. Petals obovate; upper pair crenate, but scarcely emarginate at the apex, overlapping at the base; lateral pair rather larger than the upper, with a hairy line at the throat, like the broad lowest petal emarginate at the apex; spur much exceeding the calycine appendages, curved and keeled, bluntish at the point. From *hirta* it differs mainly by its creeping stolons, shorter leaves, and odorous flowers; from *odorata*, by its less creeping habit of growth, by its differently shaped and differently toothed leaves, and more hairy leaves and petioles, paler, bluer, and more faintly odorous flowers, and pedicels at the flowering-time usually exceeding the petioles and leaves. Probably our plant is identical with *V. sepincola*, Jord. Fragm. vii. p. 8; Boreau, Fl. Cent. 3rd edit. p. 76; *V. tolosana*, Timb.; but I have no authenticated specimens from the Continent to which to make reference, and there are two or three points of minor importance in which it does not precisely accord with the descriptions.

“*Viola sabulosa*, Boreau!, ‘Notes et Observations sur quelques Plantes de France,’ p. 335. *V. Curtisii*, Mackay!, not Forster. For a small supply of this Pansy from ‘the New Brighton Sandhills,’ we are this year indebted to Mr. W. Bean, Jun. From the true *V. Curtisii*, of Forster, which it closely resembles in its habits of growth, it differs by its purple petals, more hairy stems and leaves, and by having the terminal lobe of its stipules more decidedly larger than the others, and sometimes toothed. These two (*Curtisii* and *sabulosa*) resemble each other in their small flowers, and slender cæspitose stems; filiform; and much creeping below the surface of the ground. From Mallaghmore, county Sligo, Mr. J. T. Syme sends another plant, with much more robust stems, broader and more deeply crenated leaves; petals full yellow and much longer than the sepals (as large as in the ordinary mountain form of *V. lutea*) and stipules still more like those of *tricolor* than is the case in *sabulosa*, the terminal lobe much longer and broader than the others, sometimes almost leaf-like and deeply crenated. So that we have in fact in Britain three different and probably distinct coast sandhill Pansies:—(1) *V. Curtisii*, in Devonshire and Anglesea; (2) *V. sabulosa*, in Cheshire and county Dublin; and (3) *V. Symei*, in county Sligo. Upon the Continent, *V. sabulosa* has been met with on the coast sandhills of Holland, Belgium, and the north-west of France (Dunkirk and the estuary of the Somme).

“*Sonchus oleraceus* var. *S. lacerus*, Willd. Sp. 1513. I have distributed a few specimens of this from the neighbourhood of Coatham, north-east Yorkshire. The leaves are cut almost to the midrib, their lobes sinuated and sharply incised, the terminal lobe scarcely larger than those of the sides. It is stated by Boreau to be quite constant in its characters under cultivation.

“*Polygonum mite*. Mr. John Hardy sends examples of this species gathered with *P. minus*, at Mere, in Cheshire. It is new to the Mersey province.

“*Festuca Broteri*, Boiss. and Reut. Pug. 128. Mr. A. G. More has identified his coast sandhill plant, of which mention was made in January under the name of *F. Pseudo-myurus*, var. *maritima*, with this Spanish and Mediterranean species.”

Note.—In the last Report, under *Silene italica*, for Bambridge read Cambridge.

Reviews.

Everybody's Journal (now amalgamated with the *London Journal*).

(From a Correspondent.)

The editor or editors of a recently established weekly periodical, in his address “to the readers,” among other things has the following:—“Let us bespeak, if we can, their sympathy, their goodwill, their kindly judgment, for we cannot flatter ourselves that we shall never deserve their censure, though we would fain hope that we shall never receive it.” The charity of our contemporary is worthy of admiration, and imitation also; but if he had had as many proofs of the fault-finding propensities of mankind as we have, or if his experience be not modified by an excess of charity, or an overflow of the milk of human kindness, he would not lay that flattering unction to his soul. His hope that he shall never receive censure even when censure is merited, will surely be a delusive hope. Fault-finding is as easy as lying. They that want to hurt a dog will easily find a stone, and they will not select a smooth one nor a *soft* one to fling at him.

The *rédacteurs* of this new weekly candidate for popularity, if any of them should perchance see this, will excuse a notice of some errors or inaccuracies which are recorded as evidence that good-natured persons sometimes draw on the bank of benevolence

bills which will not be accepted in the commercial mart of literature. One of the authors of these would-be witty articles, having occasion to quote Mr. Hughes, the author of 'Tom Brown's School Days,' calls the said author "the author of 'Tom Moore's School Days.'" This is doubtless a *lapsus calami*, a slip of memory.

The Polyglot proverbs of the Elegant Extracts and Bohn might make Mr. Bohn himself open his eyes or scratch his ears, in order to see or hear the meaning of the author. This, however, is a very pleasant article about proverbs, and worth reading, though the writer is not very profound in the subject, "Literature of Proverbs."

This is not written to enlighten him on the Polyglot collection of proverbs, but to give him a hint that he draws too liberally on the credulity of his readers, when he expresses his hope that though he "may need censure he will never receive it."

The Physical History of the Vale of Mowbray. By JOHN GILBERT BAKER. Printed for private circulation. Ripon: printed by A. Johnson & Co., 1858.

An apology is due to our estimable correspondent, the author of this monograph, as it may be called, for delaying to notice it for several months. It is only a small book, but it is on a large subject, which is very satisfactorily treated. The botanist will find within its twenty-eight pages all that he can reasonably desire to see in a guide to this fertile district.

The physical geography, viz. the mountains or hills, the rivers (streams), the climate, with the plants and animals, are all succinctly enumerated.

The geological nature of the strata is oolite, upper and lower, with a large extent of new red on the west. These are well depicted on a geological map, on which is described the streams, roads, towns, villages, altitudes, etc. etc.

The following list of rare plants, with their localities, is extracted from p. 14:—"The valley of Yowlasdale, opposite Boltby, is one of the best localities in north Yorkshire for those plants which require the dry character of habitation which limestones best afford. Here grows abundance of *Actæa spicata*, on the edge of woods blue

with wild Columbine (*Aquilegia vulgaris*), fringed with *Campanula glomerata*, *Geranium sanguineum*, and *Spiræa Filipendula*, and concealing in their hidden recesses the lurid berries of the Deadly Nightshade (*Atropa Belladonna*). Interspersed amongst the thickets may be found *Rhamnus catharticus*, *Rosa Sabini*, *R. tomentosa*, *Viola hirta*, *Hypericum hirsutum*, and *Lithospermum officinale*, and sometimes straggling plants of *Epipactis ensifolia*; and by the stream below flourishes *Parnassia palustris*, *Schænus nigricans*, and a profuse growth of bog Mosses, *Hypnum commutatum*, *H. stellatum*, *Bartramia fontana*, and *Bryum ventricosum*."

A list of Mosses follows on p. 15. On p. 17 it is recorded that, "According to the late Archdeacon Pierson, the thicket which contains the source of Kilburn Beck produces *Ranunculus Lingua*." Would it be very difficult to ascertain if this interesting plant still grows here?

The following is a list of plants produced on the calcareous rocks about Boltby, Rolston, etc., viz. :—

"*Helianthemum vulgare*, *Arabis hirsuta*, *Anthyllis Vulneraria*, *Geranium sanguineum*, *Scabiosa Columbaria*, *Hieracium murorum*, *Carlina vulgaris*, *Gentiana Amarella*, *Avena pratensis*, *Neckera crispa*, *Tortula tortuosa*, *Encalypta streptocarpa*, *E. vulgaris*, *Orthotrichum anomalum*, *O. cupulatum*, *Trichostomum flexicaule*, *Anomodon viticulosum*."

Whitstonecliffe, in its ravines and clefts, produced the following Ferns, viz. :—

"*Polypodium vulgare*, *P. Phegopteris*, *P. Dryopteris*, *Cystopteris fragilis*, *Aspidium aculeatum*, *A. angulare*, *Lastrea Oreopteris*, *L. Filix-mas*, *L. dilatata*, *Athyrium Filix-fœmina*, *A. rhœticum*, *A. molle*, *Asplenium Trichomanes*, *A. Ruta-muraria*, *A. Adiantum-nigrum*, *Scolopendrium vulgare*, *Blechnum boreale*, *Pteris aquilina*."

Note.—*Spiræa*, p. 15, should be *Spiræa*.

Gormire, in this vicinity, is celebrated for producing an *Epilobium* called by Mr. Baker *E. ligulatum* or *E. lingulatum*, for it has had both these names; also for *Lysimachia thyrsiflora*. Our readers will thank the learned author of this useful tract, and we apologize for not telling them about it at an earlier period.

BOTANICAL NOTES, NOTICES, AND QUERIES.

VIOLA HIRTA AND V. ODORATA.

Boreau, in his third edition (1857) of the 'Flore du Centre de la France,' describes no less than fifteen species of Violets belonging to a section where in England we acknowledge only two distinct plants.*

As the detailed descriptions are somewhat lengthy, and might not be acceptable to all the readers of the 'Phytologist,' we need not inflict them in full.

Suffice it to say that, however fanciful may appear the distinctions of the foreign botanists, no one who is desirous of claiming a thorough acquaintance with a variable species, can afford to remain ignorant of what are by some eminent botanists considered important characters. Whether these be sufficient to establish a species or not, it should surely be our endeavour to test their value upon our own soil, and so try to disprove their permanence, rather than to scout them without investigation. The so-called species are thus arranged dichotomously.

- | | |
|--|------------------------|
| 3. Stem sending out long, creeping, leaf-bearing scions | 7 |
| Creeping scions absent, or nearly so | 4 |
| 4. Ovary or fruit downy or hairy | 5 |
| Ovary or fruit glabrous | <i>V. sciaphila.</i> |
| 5. Flower slightly scented, stipules fringed with hairs as long as their own width | <i>V. collina.</i> |
| Flower scentless, cilia not so long as the diameter of the stipule | 6 |
| 6. Plant hairy, flowers bluish-violet | <i>V. HIRTA.</i> |
| Plant closely downy, flowers lilac | <i>V. Foudrasi.</i> |
| 7. Adult leaves ovate-oblong, more or less pointed | 9 |
| Leaves nearly orbicular, very blunt | 8 |
| 8. Flower bluish-violet or white, capsule depressed | <i>V. ODORATA.</i> |
| Flower flesh-coloured or lilac, capsule ovate | <i>V. Subcarnea.</i> |
| 9. Peduncles glabrous, or clothed with close down | 10 |
| Peduncle pilose throughout | <i>V. dumetorum.</i> |
| 10. Stipules with fringes of their own width | 11 |
| Fringes far shorter than the diameter of stipule | 12 |
| 11. Adult leaves dull green, spur and capsule violet | <i>V. scotophila.</i> |
| Leaves bright green, spur not coloured, capsule greenish | <i>V. virescens.</i> |
| 12. Stipules hairy all over, stolons numerous, rooting | <i>V. multicaulis.</i> |
| Stipules fringed only, stolons few | 13 |
| 13. Sepals fringed at their edges | 14 |
| Sepals glabrous at their edges | 15 |
| 14. Flowers scentless, petals much attenuated at the claw, capsule small or abortive | <i>V. abortiva.</i> |
| Flowers scented, petals little narrowed, capsule rounded | <i>V. vinealis.</i> |

* The specific distinctness of these two has been doubted by some eminent British botanists. See 'Phytologist,' N. S., vol. i. p. 76, and Cybele Brit. vol. i. p. 175.

15. Flower scented, white within as far as one-third up 16
 Flower nearly scentless, a little white at the base *V. permixta*.
16. Flower little scented, petals spreading, narrowed at their claw *V. sepincola*.
 Flower highly scented, petals little, narrowed, and so close as to form a
 tube *V. Beraudii*.
 (Boreau, vol. ii. pp. 73, etc.)

VIOLA HIRTA AND V. ODORATA.

Some correspondents of the 'Phytologist' have doubted the distinctness of *Viola hirta* and *odorata*. They would doubt no longer, I think, if they saw them growing side by side, in alternate patches, as they do here; *V. odorata* in several different forms and varieties of size and colour, but always easily distinguishable from *V. hirta*. This latter is much the more frequent plant here, and by no means peculiar to chalk, as we have none near Oxford. It occurs upon clay, gravel, and limestone; in woods, sides of fields under hedges, in peat bogs, on hillsides, and even in clay pits dug out for bricks. H. B.

GOLD-FLOWERS.

"Guilde quhilk is ane pernicious herbe, or rather ane wide, as we learn from the statutes of King Alexander the Second, who began to reign in the zear of the world 5184 of Christ 1214, and reigned 35 years." Chap. 18. "Gif the fermer puts anie guilde into the lands pertaining to the King, or ane Baron; and will not clenge the land: he sould be punissed as ane traitour quha leades and convoyes ane hoist of enemies, in the King's lands, or the Barones: (Item) Gif thy native bondman hes Guilde within thy land: for ilk stock he sall give to thee, or to anie other Lord of the land, ane Muton, as ane unlaw: and nevertheless sall clenge the land of the Guilde." The Corn Marigold is common in cornfields throughout the counties of Fife and Forfarshire, which is pronounced by the country people as Guilde and Meryguild. G. HOWIE.

CAUTION TO BOTANISTS.

By an Act of Parliament made in the 15th year of the reign of Geo. II., c. 22, all persons who shall cut, pull up, or carry away any Starr or Bent planted on the north-west coasts of England to keep the sandhills from being driven away by the winds, are liable to a penalty of 20s. for every first offence, and to imprisonment and whipping for a repetition of the same offence.

The sort of *Rush* or shrub called Starr or Bent, as the Act calls it, is doubtless well known by the inhabitants and owners of lands in Lancashire, and the coasts aforesaid; but as I and many of your readers would like to escape fine or punishment for gathering a plant (which might be unknown to us), will you be kind enough to give us the botanical name of this kind of rush or shrub called Starr or Bent. S. B.

DEAN FOREST.

List of the rarer plants of the Forest of Dean, chiefly in the north-east portion, from Nicholls' 'Forest of Dean':—*Lathræa squamaria*: Scordes, above the Lining Wood. *Narthecium ossifragum*: Mitcheldean Meand

enclosure. *Gentiana Amarella*: limestone quarry, near Silverstone. *Pyrola media*: Hare Church Hill. *Anagallis tenella*: Purliew road. *Eriophorum angustifolium*, *Viola lactea*, *Drosera rotundifolia* and *longifolia*, *Salix repens*: Mitcheldean Meand. *Genista anglica*: waste between the Dam-pool and the Speech House. *Lithospermum officinale*: throughout the Forest. *Ophrys apifera*: road to Bishopswood. *Pyrus Aria* and *pinnatifida*: Bicknor rocks. *Cotyledon Umbilicus*: Purliew road. *Narcissus biflorus*: Hope Mansel. *Mentha piperita*: Bishopswood. *Ceterach officinarum*, *Sclopendrium*, *Blechnum*, *Pteris*, *Polypodium vulgare*, *P. Phegopteris*, *P. Dryopteris*, *Polystichum lobatum*, *Lastrea Filix-mas*, *L. spinulosa*, *L. dilatata*, *Asplenium Ruta-muraria*, *A. Trichomanes*, *A. Adiantum-nigrum*, *Athyrium Filix-femina*: Forest generally.

In coppices on limestone, *Daphne Mezereon*, *Polypodium calcareum*.

T. F. R.

EARLY NAMES OF PLANTS.

Good old Izaak Walton gives the name of a plant called *Benione*, which he says drives away otters. What is this plant?

I find in Gerarde that one of the names of Columbine is *Culverwort*; but this does not prove that Culverkey is the Columbine. I do not know if any of the wild Columbines is of an *azure* colour.

PHLEUM ASPERUM.

Would any contributor to the pages of the 'Phytologist' give the required direction to the locality for *Phleum asperum*, L., at Kingsweston, near Bristol?

A RESIDENT BOTANIST AT CLIFTON.

The Editor hereby thankfully acknowledges the receipt of a printed communication from Mr. A. Stansfield, "On the new and rare varieties of *Blechnum Spicant*, found in the neighbourhood of Todmorden and other places during the summer and autumn of 1859, being a paper read before the Todmorden Botanical Society, by the President, Mr. A. Stansfield, March 5th, 1860."

An epitome of this paper will be given in an early number of the 'Phytologist.'

Communications have been received from

H. C.; R. E. C.; Edwin Lees, F.L.S.; A. G. More, F.L.S.; Thomas Moore, F.L.S.; H. B.; John Sim; Sidney Beisly; W. P.; J. Sadler; R. P. Burcham; Edwin Green; T. Kirk.

BOOKS RECEIVED FOR REVIEW.

The Gardeners' Chronicle, from January to March, 1860.
Hooker's Species Filicum, Part X., or Vol. III. Part 11.

ERRATA.

On page 91, last paragraph, for *Mercurialis annuus* read *M. annua*; and on page 92, for *Silybum Marianus* read *S. Marianum*.

BOTANICAL RAMBLES.

No. 1.—*Excursion to the Neighbourhood of Moffat, Dumfriesshire.* By JOHN SADLER, Sec. B.S.E., etc. (Abstract of a paper read before the Fleming Society of Natural Science, New College, Edinburgh, 7th February, 1860.)

Since Dr. Balfour was appointed Professor of Botany in the University of Edinburgh—now some thirteen or fourteen years ago—it has been customary for him to spend the Saturdays of the summer session with his class* in the fields and woods. And no one who has joined in these pleasant rambles, can but feel a peculiar secret satisfaction and delight in looking back upon them, and calling to remembrance the sylvan and romantic scenery, and all the pleasing incidents that characterized and diversified these country walks, in the prosecution of so fascinating a science.

These class excursions, moreover, have added in no small degree to our acquiring a correct knowledge of the flora of many parts of Scotland, and more particularly within a range of about sixty miles of the metropolis. The neighbourhood of Moffat, then, with all its pastoral beauties, as well might be expected, has been frequently visited:—first, I believe, in 1851; again in 1856, when the Grey Mare's Tail and the desolate tarn of Loch Skene, with its surrounding hills, were the localities of our research; and again on the 9th of July, 1859, of which the following is a brief sketch. About seventy of us met that morning in Edinburgh, at the Caledonian Railway station, so early as a quarter past six, and proceeded to Beattock, a distance of sixty-two miles, which we reached a little before ten. It was truly a morning of surpassing beauty and loveliness—all Nature seemed gladsome, lavish, and luxuriant: it was just such a one as our hearts could have desired,

“To climb
Some breezy summit's brow sublime.”

I think I can hear some of our *non-botanical* members censuring us for our enthusiastic love of “weeds,” and humming

* Which consisted this last session of 255 (!) students.

over to themselves a verse of the "Botanist's Battle of Glen Tilt:"—

"Some folk 'll tak' a heap o' fash
 For unco little end, man,
 An' meikle time an' meikle cash
 For nocht ava they'll spend, man.
 Thae chaps had come a' hunder mile
 For what was hardly worth their while—
 'Twas a' to poo
 Some gersie that grew
 On Ben M'Dhu,
 That ne'er a coo
 Would care to pit her moo till."

Nevertheless I would not apologize for our seeming monopoly of enthusiasm, but simply repeat our leader's motto, "Excursions are the life of the botanist!"

After partaking of a sumptuous breakfast at the Beattock Hotel, which is a little way off from the railway station, we were joined by the Rev. Mr. Little, of Kirkpatrick-Juxta, who very kindly conducted us along the hillside to a beautiful wild ravine, known as the Girpel Linn, where we were likewise met by the Rev. J. G. M'Vicar, D.D., of Moffat. On the hill slopes we gathered a few good plants, perhaps not unworthy of notice. *Jasione montana*, a somewhat rare plant in the country, occurred here and there pretty abundantly. *Campanula rotundifolia*, *Antennaria dioica*, *Galium saxatile*, *G. verum*, *Digitalis purpurea*, *Erica cinerea*, *Triodia decumbens*, *Blechnum boreale*, and *Lastrea Oreopteris*, were all common on the drier parts, while in wet spots *Erica Tetralix*, *Myosotis palustris*, *Pinguicula vulgaris*, *Orchis latifolia*, *Narthecium Ossifragum*, etc., occurred plentifully. We searched in vain for *Ophioglossum vulgatum* and *Botrychium Lunaria* on the banks where we had seen them growing on a former occasion. I fear, however, that some sordid nurseryman's collector has been in that neighbourhood, as well as in many others; hence the mysteriously rapid disappearance of not a few of our rarest gems from their wonted hiding-places. On the moist rocks at the Linn we met with, in great abundance, *Hymenophyllum Wilsoni*, as well as with *Cystopteris fragilis*, *Polystichum aculeatum*, *Asplenium Filix-femina*, *Hypericum perforatum*, *Valeriana officinalis*, *Lysimachia nemorum*, and many others of less note. Mosses, as well might be expected

from the damp situation, were very exuberant, upwards of forty species being collected. The more interesting kinds were *Neckera crispa*, *N. complanata*, *Tortula tortuosa*, *Zygodon Mougeotii*, *Aulacomnion palustre*, *Mnium punctatum*, *M. undulatum* (the latter occurred very large, but in a barren state), *Fissidens adiantoides*, *Anomodon viticulosus*, *Isotheceium alopecurum*, *Hypnum plumosum*, *H. ruscifolium*, etc.

On reaching the lower extremity of the ravine, we crossed the railway, and retraced our steps in a somewhat different path to Beattock Inn. Here our party divided, some going direct to Moffat village, others across the dale to the Beld Craig, while the greater number accompanied Mr. Little to the manse, to see his admirable collection of growing native Ferns. We all met again, however, at the Beld Craig Linn about two o'clock in the afternoon, where we partook of luncheon, seated by the margin of the gurgling waters. It is a moist secluded dell, a wild ravine nestling in the bosom of a hill, containing a lofty exposed cliff (hence its name), over which a sparkling brook precipitates itself down a narrow channel, worn deep in the Silurian rock by the action of the waters, and through which the descending torrent brawls and tears with resistless impetuosity in wild and gloomy grandeur, till reaching the bed of the burn, where,

“Having sunn'd itself
Amid its beauty—as a tear might sleep
In joy awhile upon a maiden's cheek,”

it wanders on its way, down the rocky furrow, among flowery banks, soothing itself with its own gentle music.

This little wooded glen is a rich garden to the botanist. It was here that many of us met, for the first time in our lives, the rare *Pyrola secunda* and the beautiful *Asplenium viride*, which had forsaken their highland homes to dwell beside this romantic lowland waterfall. In the more immediate vicinity of the cascade *Stellaria nemorum* grew in considerable abundance; while on the banks, and in the surrounding thickets, we met with such plants as *Lychnis diurna*, *L. Flos-cuculi*, *Stellaria graminea*, *Geranium sylvaticum*, *Geum rivale*, *Epilobium montanum*, *Valeriana officinalis*, *Pyrola minor*, *Melampyrum pratense*, *Mentha sativa*, *Stachys sylvatica*, *S. Betonica*, *Lysimachia nemorum*, *L. Nummularia*, *Habenaria chlorantha*, *Carex binervis*, *C. sylvatica*,

Milium effusum, *Lastrea dilatata*, *L. Oreopteris*, *Polypodium Dryopteris*, *Lycopodium Selago*, etc. Among the Mosses and Lichens we picked were *Blindia acuta*, *Orthotrichum Drummondii*, *Bartramia fontana*, *Dicranum squarrosus*, *Physcomitrium polyphyllum*, *Sticta pulmonaria* in fruit, *S. fuliginosa*, *Nephroma resupinata*, *Alectoria jubata*, *Usnea florida*, and some others, which we had gathered at Girpel.

The roadsides between the Beld Craig and Moffat furnished us with beautiful specimens of *Ranunculus hederaceus*, *Geranium pratense*, *Malva sylvestris*, *Montia fontana*, and *Achillea*, *Piarmica*, along with a few other commoner plants.

By the time we arrived at Moffat, "loveliest village of the plain," the afternoon was far spent, so that we had to hurry for the railway station. Two or three of us, however, managed to pay a hasty visit to the famous sulphuretted mineral well, which is about two miles distant from the town, and partook of a tumbler of its health-giving water. We left Beattock by the 5.20 p.m. train, and reached "Auld Reekie" about nine, all fully satisfied with our pleasant ramble.

PLANTS OF PERTH.

Addenda and Explicatory Remarks to the Flora of Perth.

By JOHN SIM.*

During my Botanical Rambles last summer, I had the pleasure of discovering several plants new to me in this neighbourhood, as also additional stations or localities for several of those already recorded in my Perth List. I therefore deem it proper, in addition to their announcement in my Rambles, to give them in an additional or supplementary form to the List already published, with some explanatory remarks relative to their frequency or rarity, and claims as indigenous plants. But let it be distinctly understood, that while I unhesitatingly venture my opinions, I ever hold it a rule to allow another the same privilege of independent thought I claim to myself.

Whatever diversity of opinion may exist among Botanists relative to the distribution and aboriginal claim of many of our

* See 'Phytologist,' N.S. vol. iii. p. 33.

British plants, it will be agreed upon by all who peruse these Lists (the former and present) that the flora of the Fair City is both "rich and rare."

That the floral gems of this neighbourhood exist, and are to be found, is a point easily settled, being plain matter of fact. How they are here, or how they came, is a very different matter; and neither question, I fear, will ever be satisfactorily answered. The Great Creator, whose omnipresence and omniscience are commensurate with his omnipotence, can alone solve such mysteries.

In the following list I have, as on the former occasion, adopted the alphabetical arrangement, as a ready mode of reference.

Those plants whose names have an asterisk prefixed, have not been the subjects of personal confirmation, but may, by the reader, be relied on as a very near approximation (in every instance) to truth.

The words Barnhill toll-bar, in the list at p. 33, vol. iii., have, in all cases where they should have been written, been by mistake on my part written Kinfauns toll-bar; the reader will therefore be pleased in every case where he finds the latter printed to expunge it, and insert Barnhill toll-bar.

Anchusa sempervirens. South side of Moncrieffe Hill, near the foot.

**Adoxa moschatellina*. Redgorton parish.

Allium oleraceum. Left bank of the Tay, from opposite Perth city to nearly a mile below it; abundant.

Anagallis arvensis. Cornfields; frequent.

Aquilegia vulgaris. Wood north side of Birnam Hill, near the foot, about a mile to the west of Dunkeld; not plentiful.

Atropa Belladonna. Plantation at the foot of Moncrieffe Hill, south side.

Astragalus hypoglottis. Waste ground near top of Kinnoul Hill; sparingly.

Avena pratensis. Borders of fields; plentiful.

**Bidens tripartita*. Near Mill of Luncarty, Redgorton parish.

**Calamintha acinos*. Redgorton parish.

**Camelina sativa*. Fields near Pitcairn Mill, Redgorton parish.

Catabrosa aquatica. Margin of a stream, foot of North Inch; is probably now extirpated, as the stream has lately been cleared out.

Ceterach officinarum. Rocks near top of Kinnoul Hill; very sparingly. This fern, so plentiful in Ireland, is a great rarity in Scotland.

**Cichorium Intybus*. Fields of Pitmurthly and Redgorton Hill, Redgorton parish.

Chrysosplenium alternifolium. Wood of Methven.

Cnicus eriophorus. Near Kinnoul School and roadside at Craigie. Only in both places did I detect a single plant; also in Den of Redgorton; luxuriantly.

Convallaria majalis. Wood of Methven; plentiful.

Corallorrhiza innata. Wood of Methven; plentiful.

Cynoglossum sylvaticum. This very rare plant, mentioned in my Perth List as growing near Kinfauns toll-bar, should have been stated as growing near Barnhill toll-bar. It is, I believe, found nowhere else in Scotland, and is rare in England. Here it grows plentifully on the right-hand side of the road, about a mile and a half from Perth, occupying a space of twenty or thirty yards under an old hedge, on a steep incline elevated about 100 feet above the level of the Tay; a few straggling plants are found near the same place, on the opposite side of the road. I am firmly persuaded, taking all things into consideration, that it has not been introduced to its present position by human agency.

Doronicum Pardalianches. South side of Moncrieffe Hill.

Doronicum plantaginea. South side of Moncrieffe Hill, along with *Anchusa sempervirens*; both certainly wild; plentiful.

Empetrum nigrum. Birnam Hill.

**Epipactis ensifolia*. Methven Wood.

**Epipactis grandiflora*. Methven Wood.

**Epipactis latifolia*. Methven Wood.

**Erigeron alpinus*. Shelving rocks, banks of the Almond, near Leynedoch House.

**Eupatorium cannabinum*. Redgorton parish. Also right bank of Tay, old shore of Perth, *J. Sim*.

Festuca bromoides. Pasture ground, near top of North Inch; sparingly.

Genista anglica. Methven Bog.

**Geranium lucidum*. Redgorton parish.

**Geranium columbinum*. Moncrieffe Hill, and also near Invermay.

**Hypericum barbatum*. Side of a hedge, near to Aberdalgie. Strathearn.

Habenaria albida. Birnam Hill; sparingly.

Hesperis matronalis. Moncrieffe and Kinnoul Hills; abundant.

Linnaea borealis. Wood of Scone, under an aged Scotch Pine, covering an area of three or four square yards. Distant from Perth city about three miles and a half, in a north-easterly direction.

**Listera Nidus-avis*. Wood of Methven; also wood near Blairgowrie.

**Lychnis viscaria*. Den of Balthayock, Glen Farg, and near to the river Earn, about three miles west from Perth.

**Nuphar lutea*. Redgorton parish.

Nuphar pumila. Loch of Moncrieffe.

**Nymphaea alba*. Loch of Mullion, Redgorton parish.

**Medicago sativa*. Border of a field, near top of Kinnoul Hill.

**Paris quadrifolia*. Invermay, Den of Balthayock, and Methven Wood.

**Peplis Portula*. Gravel-pit, Pitcairn Green, Redgorton parish.

Ornithopus perpusillus. Craigie Moor; and also found a little to the west of Perth.

Plantago maritima. Margin of Tay, near top of North Inch.

Poa nemoralis. Wood, Kinnoul Hill; plentiful.

Poa compressa. Bank of Tay, old shore, Perth.

Polygonum viviparum. Birnam Hill, and Wood of Scone; frequent.

Ranunculus hirsutus. Near Perth penitentiary, on waste ground; plentiful.

Sanicula europaea. Corner of a plantation near top of Craigie Hill; sparingly.

**Scolopendrium vulgare*. Supposed to be on Moncrieffe Hill; but as I have not seen it there in a growing state, nor had specimens from that locality, I will not assert positively its existence there. This fern, like *Ceterach officinarum*, is rare in Scotland, but abundant in Ireland.

Scrophularia vernalis. Abundant and luxuriant on the southern side of Moncrieffe Hill, under trees, and undoubtedly wild, and not an escape from cultivation, as no gardener or florist would ever tolerate such a noxious and offensively scented plant in his garden.

**Sedum anglicum*. Rocks, Craigend, one mile south of Perth.

**Stratiotes aloides*. I have not, from ill-health, been able to visit the bog in Methven parish, where this singular plant grows; but that it is found there is an undeniable certainty, as I had years ago a fresh specimen of the plant in full blossom. The existence of this plant in Scotland has been ignored (I mean as indigenous), for what reason I cannot divine. It is as likely, and more so, to be a native of Scotland, than of England, as it is a northern plant, and found all over Northern Europe, from Lapland to Siberia. And, moreover, Hooker, in his 'Flora Scotica' of 1821, records its occurrence in two or three places without any note or comment relative to its introduction; presumptive evidence, I think, that he considered it a native of Scotland. The bog in question is about four miles and a quarter to the west of Perth city, and near the other bog where the *Scheuchzeria* grows.

**Teucrium Chamædrys*. Near Dunkeld road-side, about four miles north from Perth.

Valeriana pyrenaica. Plantation, foot of Moncrieffe Hill, south side.

Vinca minor. On rocky soil in Moncrieffe Hill wood.

Vaccinium Myrtillus. Kinnoul Hill; most abundant.

Vaccinium Oxycoccus. Methven Bog, where the *Scheuchzeria palustris* grows; abundant.

Vaccinium Vitis-idaea. Birnam Hill.

Viola hirta. Wood near top of Kinnoul Hill; plentiful and luxuriant. A very beautiful plant, and considered by one of the contributors to the 'Phytologist' to be identical with *Viola odorata*. From this opinion I entirely dissent, as almost all botanists are of the same opinion as myself, and in my opinion justly so. The absence of fragrance and sarmenta, and situation of bracts on the peduncle, sufficiently distinguish it from *Viola odorata*. This violet has heretofore been almost denied a habitation in Scotland. In this locality it is undoubtedly wild.

Viola odorata. Near the right bank of Tay, under a hedge, and covering a space of two square yards. Its situation is as far removed from a human habitation as is possible in the populous district where it grows. I believe it be as

truly wild as in any situation in England or Ireland. The other locality is on the left bank of the Tay, opposite the centre of Perth city, and it is possible it may be there an outcast from a garden, as gardens are in the vicinity of its habitat; it is in this latter place very sparingly found.

I cannot close this paper without remarking that I am more than ever confirmed in my opinion that *Aremonia agrimonioides* is a true native of Scotland. What corroborates my views on this point is its hardy nature, for it endures the severest winters in exposed as well as in sheltered places, and its want of beauty in the florist's eye to render it worthy of a place in the parterre. Notwithstanding the unprecedentedly rigorous winter of 1859-60, when numbers of our native plants succumbed to the intensity of the frost, this humble unassuming plant stood the cold in exposed ground in the open air when the thermometer was, on the night of the 13th and 14th February this year, as low as zero. The cold of that night killed every geranium (*Pelargonium* strictly speaking) in the sill of my parlour window. I have had the *Aremonia* growing in the open air unsheltered for three winters, and it has thriven amazingly; no amount of cold common to Britain seems capable of destroying its vitality. The same remarks in a great measure apply to *Claytonia alsinoides*, which has not only thrown out successive crops of blossoms from May to October, but endured the cold of this rigorous winter and is still living and thriving in a pot in the open air; it was exposed outside all winter along with the *Aremonia*. It appears to me not to be annual, but time will tell.

JOHN SIM.

LASTREA REMOTA.

By JOHN LLOYD.

In reading Mr. Moore's account of *Lastrea remota* in the 'Phytologist' for the present month (April, 1860) two questions suggested themselves to me: first, what is *Aspidium remotum* of Professor Braun? and, secondly, is his plant and the Windermere plant identical?

It appears that Professor Braun first associated it with *Lastrea*

rigida; subsequently he elevated it to the position of a species; and now considers it to be a variety of *L. Filix-mas*. This is bad data to form any judgment upon, and the only conclusion which I can come to is, that it is a plant which the learned Professor himself cannot properly define. It has not, to my knowledge, been introduced in a living state into any of the Botanic Gardens of this country; and until it is, we cannot see it and the Windermere plant grown together under the same treatment, which is, I believe, now acknowledged to be the truest criterion for distinguishing nearly allied forms.

With regard to the Windermere plant, I cannot help suspecting that we may have got an old acquaintance with a new *alias* attached to it (and it had certainly quite its share before). The oblong-lanceolate, subtripinnate, glabrous frond, the acuminate, distant pinnæ, the ovate-oblong, acute, pinnatifid pinnules, the blunt, serrated, mucronulate lobes, the sori upon the whole frond, biserial next the costa, and the reniform, persistent indusium, are all of them prominent characteristics of *L. uliginosa*. The question as to the identity of the Windermere plant will be probably set at rest in the ensuing summer; and I have to observe that I shall feel great pleasure in presenting a strong, healthy plant of *L. uliginosa* to any botanist who may feel disposed to visit Windermere in search of the supposed new Fern. I have three which I can spare, and I would recommend an early application.

French Horn, Wandsworth, Marth 27.

WHICH IS RANUNCULUS HETEROPHYLLUS?

Mr. Babington, at the date of his important paper upon the Batrachian *Ranunculi* of Britain (1855), claimed as found in England all the French species except *R. ololeucos*.

Little seems to have been done since that time to increase our knowledge of the group; nor is it believed that botanists have altogether acquiesced even in the estimate of 128 (?) as the number of British species.

But as there appear to be several more forms (now described in the continental Floras) of the ancient *R. aquatilis*, and as we

believe that local botanists are in the habit of bestowing the name of *R. heterophyllus* upon dissimilar plants, we hope that the space will not be grudged by our readers, which we would devote to some of Boreau's descriptions of the species which produce floating leaves; and which we hope may, some of them, be recognized in England during the ensuing month of May.

R. tripartitus and *R. Baudotii* are probably sufficiently well known, and, being more easily recognized than the others, we need not repeat their character here beyond referring to the Manual, edit. 4, pp. 6 and 7.

R. oroleucos, Lloyd, will be known at a glance by its petals being altogether white, with *no yellow spot at the base*.

For the others we will quote M. Boreau, as his characters may afford something in addition to those familiar to the student of Babington's Manual, and they are besides essential to the right discrimination of the several plants.

R. confusus, Godr. *Stem* stout, usually floating; *submerged leaves* nearly all sessile, not collapsing; the *floating leaves* glabrous beneath, deeply divided into wedge-shaped lobes, their membranous sheaths attached to the petiole for their lower two-thirds; *peduncles* far exceeding the leaves; *receptacle* ovate, conical, dotted with fine hairs; *petals* obovate-cuneate, yellow at their base, much larger than the calyx; *stamens* numerous, exceeding the pistils; *carpels* often glabrous, compressed, not swollen, narrowed towards their summit into an ensiform style, which springs from the upper edge of the pistil; *stigma* strap-shaped, papillose.

Obs.—*R. Baudotii* differs in having stamens *shorter* than the pistils, carpels *inflated* at their summit, etc. We wish that our readers would pay strict attention to distinguishing between these two brackish-water plants.

R. triphyllus, Wallr. *Stem* elongated; *submerged leaves* with capillary lobes spreading in a circular form; upper leaves *floating*, nearly glabrous, tripartite, their lobes cuneiform, incise-dentate, with two or three usually obtuse teeth, more rarely divided into narrow lobes; *petiole* dilated into membranaceous stipules; *peduncles* erect, at length recurved and longer than the leaves; *flower* moderate, sweet-scented; sepals concave, bordered with white; *petals* obovate, rounded, contiguous; *stamens* twelve to fifteen, with oval bright-yellow anthers about as long as the ovaries;

carpels glabrous, shining, swollen, not bordered, rhomboid-ovate; *stigma* thick, becoming a short beak, compressed, little curved, evanescent.

R. radians, Revel. *Stem* hollow, branched; *submerged leaves* stalked, their segments flaccid, circular in outline; *floating leaves* velvety beneath, orbicular, deeply cut into radiating segments, some of them cuneiform-toothed or cut into lobes, the others with short stalks, laciniate; *petioles* dilated into membranous, downy, auriculate stipules; *peduncles* shorter than the leaves or nearly equalling them; *calyx* spreading; *receptacle* spherical, hairy; *petals* obovate, narrowed at their base, about twice as long as the calyx; *stamens* fifteen to eighteen, longer than the ovaries; *carpels* numerous, hairy, especially on their keel, obovate, compressed, with the inferior keel very convex, the superior a little depressed towards the base, convex near the style: *beak* moderate, thick, obliquely ascending, inserted a little above the outer extremity of the long diameter.

There is a form of this with glabrous carpels. *Obs.*—*R. Godronii*, Gren., resembles *R. radians*, but is more slender, flowers only half as large, its carpels fewer, with a more slender keel.

R. rhipiphyllus, Bast. *Stem* little branched; *submersed leaves* with long, setaceous, flaccid segments; *petioles* with small stipules or none; *floating leaves* nearly truncate at the base, spreading like a fan, with three shallow lobes, which are twice or three times notched; *peduncles* slightly longer or shorter than the leaves; *calyx* much spreading, with concave sepals; *flowers* of moderate size; *petals* obovate, narrowed, distant from each other; *receptacle* hairy; *carpels* numerous, clothed with few and not permanent hairs, obliquely obovate, hardly mucronate when the stigma has fallen: *stigma* thick, glandular, yellowish, a little curved.

R. aquatilis, Dodon. and Linn. Sp. (*B. heterophyllum*, Fries). *Stem* fistulose, angular; *submersed leaves* with short, compressed petioles, their segments flaccid, spreading in the water, collapsing in the air; *floating leaves* reniform, lobed, often velvety beneath: base of the *petiole* dilated into a membranous adhering sheath, which is shortly auriculate and often hairy; *peduncles* hardly exceeding the leaves; *buds* ovate-globular; *calyx* spreading; *receptacle* spherical, hairy; *petals* obovate, much exceeding the calyx; *carpels* large, not narrowed at their base, nearly always hispid, with a widened beak which is curved at its summit.

Three principal varieties of this species are:—

a. Floating leaves reniform, with three or five more or less crenate lobes.

b. Floating leaves truncate at their base, with spreading and sometimes very much pointed lobes.

c. Floating leaves cut into narrow, radiating lobes.

Another variety, growing on land, has its leaves all reniform. The size of flower is very variable, and so are the leaves both as to size and the spots of brown.

R. floribundus (Bab.). *Submersed leaves* closely trifurcate, their segments rather rigid, not collapsing; *floating leaves* long-stalked, subpeltate, semitrifid or tripartite, with sessile, obovate, 3-5-lobed segments; *peduncles* not narrowed, scarcely exceeding the leaves; *flowers* large; *petals* obovate-cuneate, nine- or many-veined, not contiguous, persistent; *stamens* numerous, exceeding the pistils; *stigma* tongue-shaped; *receptacle* spherical; *carpels* semi-obovate, very blunt.

“Floating leaves convex, divided more than halfway down, more than semicircular; outer base of the lateral segments much rounded. Stipules broad, with a free, rounded end. Buds depressed. Flowers star-like. Stamens 20-30. Style recurved. Receptacle as thick as the peduncle. Inner edge of the carpel nearly straight.”—Bab. Man. ed. 4. p. 7.

R. peltatus, Schrank et Fries (Batz.). Similar to *heterophyllus*, but its *submerged leaves* with longer stalks; petiole semicylindrical, furnished with less conspicuous auricles; *floating leaves* peltate, roundish, heart-shaped, with three or five crenate lobes; *peduncles* slightly exceeding the leaves; buds globular, depressed receptacle ovate, hairy; *petals* obovate, rounded, contiguous, large; *carpels* glabrous or downy, closely resembling those of *R. heterophyllus*.

The dichotomous arrangement of these plants is as follows:—

- | | |
|--|---------------------------------|
| 1. Receptacle globular | 2 |
| Receptacle ovoid, conical, peduncles very long | 8 |
| 2. Petals obovate, rounded, contiguous | 3 |
| Petals narrowed below and separate | 6 |
| 3. 12-15 stamens, upper leaves tripartite | <i>R. triphyllus.</i> |
| Stamens numerous, upper leaves lobed | 4 |
| 4. Floating leaves reniform | <i>R. aquatilis (heteroph.)</i> |
| Floating leaves peltate | <i>R. peltatus.</i> |

5. Submerged leaves flaccid 7
 Submerged leaves rigid *R. floribundus*.
 6. Floating leaves spreading like a fan *R. rhipiphyllus*.
 Floating leaves cut into radiating lobes *R. radians*.
 7. Pistils exceeding stamens, carpels swollen at top *R. Baudotii*.
 Stamens longer than pistils, carpels narrowed at top *R. confusus*.
 (From *Boreau*, 'Flore du Centre de la France,' ed. 3, 1857; except
R. floribundus, which is taken from 'Babington's Manual,' ed. 4, 1856.)

HYPERICUM HIRCINUM.

On the occurrence of Hypericum hircinum, L., and Impatiens parviflora, DC., near Liverpool. By THOMAS KIRK.

In a packet of plants collected in the vicinity of Liverpool by my brother, Mr. George Kirk, I find specimens of the above. A brief notice of the circumstances under which they were found will probably prove interesting to British botanists.

Hypericum hircinum, L. "In great abundance and luxuriance, sometimes attaining the height of from four to five feet, amongst thickets of brambles, etc., in the old lane by Ince Blundell Park. There is no trace of its having escaped from cultivation."

A native of the south of Europe, distinguished from *H. Androsæmum*, L., by its cordate-lanceolate leaves, and from *H. anglicum*, Ber., by its short sepals and its styles *not* exceeding the stamens.

Impatiens parviflora, DC. "In small quantity in a paddock near Sedforth church, and abundantly in a small yard and about a ruined pigstye; also where a boiler for steaming food for cattle formerly stood, at no great distance from the first-mentioned habitat."

From the nature of its habitat in this instance we can have little doubt of its having been introduced with foreign grain. It is a native of Mongolia, and, Tartar-like, seems disposed to wander. Mr. Borrer informed me that it had escaped from his garden at Henfield, and thoroughly established itself upon a turfy bank and in two adjacent timber-yards, filling up the interstices between the timber, so that we may soon expect to see its claim to denizenship fully established.

This species is easily recognized by the small size of its pale-yellow flowers and its three- to ten-flowered peduncles, which are much longer than the sharply-serrate, ovate, acuminate leaves.

Reviews.

Species Filicum; being Descriptions of all known Ferns. By SIR WILLIAM J. HOOKER, K.H., etc. etc. London: Pamplin.

It will be gratifying to many of our readers to be informed that Parts XI. and XII. will shortly be published: this is a pledge that this important work is advancing steadily to its termination.

The greater portion of Part XI. is filled up by the *Asplenieæ*, and upwards of 130 species of the genus *Asplenium* are illustrated or verbally described in this part of the work. The other genera and species here entered are *Woodwardia* and *Doodia*.

Our readers are presented with the following extract from p. 95, on the geographical range of *Asplenium marinum*:—

“Although so common on the rocky coasts of the British Isles as far north as the Orkneys, it is nowhere known as an inhabitant of Germany or Scandinavia, but following the coasts of France and Spain, it extends south to the Canary Islands. It appears in Tangiers, on the African coast, and in the Western Islands of the Mediterranean. It appears in New Brunswick, Nova Scotia, and the West Indies. Though a maritime plant, it is in England, at least, like the *Plantago maritima* and *Armeria maritima*, also occasionally found on mountains remote from the coast. Some of our specimens from Madeira have the fronds more than a foot long, independent of the stipes. Though variable in the size of the fronds and even in the form and outline of the pinnæ, sometimes elongated and pinnatifid, it is a species easily recognized, especially by its glossy ebeneous stipes.”

A. Trichomanes is the next British species described here. Its range is the following, p. 137, viz.:—

“On stone walls and rocks, throughout Europe, Caucasus, and Tauria, Greece, South Africa, N. S. Wales, Bathurst, Paramatta, Victoria, Mount Aberdeen; Persia, Ghilan; E. Indies, Cashmere, Ladak, Mussoorie, and Affghanistan; in the East, through the range of Himalaya to Kamaon,

Bootan, near Pansa, elevation 7,500 feet; N. America, Canada, Saskatchewan and thence to Pennsylvania, Columbia, North-west America, New Mexico, at 3000 feet elevation, Andes of Peru; Sandwich Islands on Mouna Roah; West Indies, Cuba and Jamaica. Var. *majus*: Madeira, Azores and Canary Islands frequent, Tropical America, Jamaica, Cordillera of Orozaba, Mexico, elevation 10,000 feet, Caracas, Merida (pinnae more than half an inch long, subrhomboid), Quitinian Andes, trunks of trees (pinnae three-quarters of an inch long)."

A. viride, Huds., p. 144. This well-known fern is entered with the following range:—

"Throughout Europe, chiefly in mountain or subalpine regions, from Trondheim, in Norway, to the Spanish Pyrenees, Himalaya, Glacier of Pindari, Kumaon, elevation 12,000 feet, Rocky Mountains of British North America. One of the most delicate and beautiful of European Ferns, confounded by Linnæus with *A. Trichomanes*: long supposed to be limited in its localities, now found in widely remote regions, for there are specimens in my herbarium from the Rocky Mountains in British North America, and equally from the lofty regions of Himalaya. Its nearest affinity is assuredly our next species, *A. fragile*, from the Peruvian Andes."

The Natural History Review, No. IV., Vol. VI. Williams and Norgate, London.

The present number of this useful periodical has more than its usual quantity of matter attractive to botanists.

There is, first, p. 433, a paper "On the Distinctive Habits of British *Hymenophyllum*, by Wm. Andrews, M.R.I.A." The learned author of this article commences with the statement that George Bentham has reduced the number of species described in Mr. Babington's Manual by the suppression of 423, nearly a fourth part of the presumed species indigenous in the British Isles; and also states that the same author has reduced the number recorded in Hooker and Arnott's Flora of these Islands, by withdrawing 286.

"‘I have ever advocated,’ he continues, ‘that more merit would result from an investigation of a revision and correction of our zoological and botanical nomenclatures, than in new discoveries or additions to our Fauna and Flora. Although it is extremely difficult to form opinions as to the limitation of species, yet I fully concur in the views of

those who consider that species have been multiplied far beyond their due limits. Still, extremes in either case are questionable, for even the non-existence of distinct species has been asserted."

After paying a not undeserved compliment to Mr. Bentham, whose high scientific position and botanical zeal are eminently deserving both respect and admiration, the author begins his subject, premising that his remarks are limited to the genus *Hymenophyllum*, as it is represented in the author's own country, Ireland:—"Of this genus," he states, "we have two well recorded and described species, *Hymenophyllum tunbridgense* and *H. Wilsoni*; the latter has been discarded in Mr. Bentham's recently published Handbook, but with what utility is to be seen."

After dismissing Ray's 'Synopsis,' Withering's 'Arrangement,' Hudson's 'Flora Anglica,' and Bolton's 'Filices' as untrustworthy, "especially," he says, "when we find *H. tunbridgense* quoted by Ray and Withering as growing amongst pebbles at Cockbush, on the coast of Sussex," he further notices the excellent work of Sir William Hooker, 'Species Filicum,' "where we find such numerous affinities and synonyms given as views of different botanists, completely perplexing the species *tunbridgense*, *Wilsoni*, and *unilaterale*." On such grounds, he surmises, Mr. Bentham deemed it proper to reject the two latter, and retain only the former as the sole British representative of the genus in Britain. An easy way of solving the difficulty, cutting them adrift instead of disentangling them.

Mr. Andrews next refers to the excellent descriptions given of these plants in Hooker and Arnott's 'British Flora,' p. 592, Hooker's 'Species Filicum,' vol. i. p. 95, Wilson's observations in Hooker's 'Journal of Botany,' vol. i. p. 317, and 'Supplement to English Botany,' t. 2686. As distinctive marks he states that the fronds of *H. tunbridgense* are more delicate in structure, broader, and more lanceolate than those of *H. Wilsoni*; also the pinnæ are pinnatifid, with numerous segments, distichous or pointing in opposite directions, and flat; the involucre both in the early stage and in the ripened state of the capsules are broadly ovate, or more properly subrotundate, invariably toothed or spinous, and swollen only at the base; colour pale glossy green.

"In *H. Wilsoni* the pinnæ are scarcely pinnatifid, with fewer segments than in the former; the pinnæ unilateral, and with the rachis curved in a

direction contrary to that of the fructification; involucre numerous, truly ovate, each valve remarkably convex, gibbous, or inflated throughout, etc., smaller than *H. tunbridgense*, more rigid, of a strongly reticulated structure, and of a darker or more lurid green."

He further shows that in the distribution there is a wide separation. "*H. tunbridgense* is decidedly a subalpine plant, affecting shady glens and courting the screen of aged woods." In such localities *H. Wilsoni* is never found. *H. Wilsoni* affects elevated and open situations where it is more exposed to atmospheric influences than the former is, which delights in sheltered positions.

In the conclusion of this excellent paper, the author does not decidedly affirm that *H. Wilsoni* is certainly a synonym of what is by some authors called *H. unilaterale*, but quotes from a letter to himself from Bory de St. Vincent, who evidently inclines to the opinion that the name *H. Wilsoni* should be retained as the representative of our second British *Hymenophyllum*.

In another paper on the same subject, D. N. H. Rev. 439, Mr. Andrews informs his readers that "there is no record by Willdenow of the existence of *H. unilaterale* in Europe," and considers it probable that "the form now described by Continental botanists under that name is none other but *H. Wilsoni*." This might surely be easily settled by a comparison of Continental with British specimens.

We wish one of our excellent and amiable correspondents, who is now botanizing in the south of France, the French Alps, and Pyrenees, would turn his attention to this interesting question, and give our readers the benefit of his observation and experience.

There is in this admirable paper much more matter about Ferns which would be interesting to our readers, but space, alas! forbids extracting it, at present. In a future number some more of Mr. Andrews' experience may be communicated in our pages. There are indeed symptoms, in the second paper on this subject, of a rather fierce contest between the supporters of the unity and the duality of these plants. Into this we do not venture.

The article is recommended to those who wish to learn the opinions of the belligerents on both sides. "What great events from trivial causes spring!"

Note.—In Sir Wm. J. Hooker's letter to Mr. Andrews, stating his opinion that the two are distinct, *Prest* is printed for *Presl*.

The next botanical paper to be noticed here is entitled "Hints towards a Cybele Hibernica," by C. C. Babington, M.A.

This paper, which our room forbids printing *in extenso*, is on page 553, and fills nearly four pages of the Review. The author proposes that Ireland should be divided into twelve provinces, and points out a mode by which the Association may proceed in preparing materials for a Cybele Hibernica. Modes are more easily pointed out than carried out. Yet there is no insuperable difficulty attending the execution of such a design. A society of learned and scientific men, even with but scanty funds at their disposal, are surely capable of performing less than one individual successfully accomplished for the sister island of Great Britain, at least three times as large as the Emerald Isle. It has been stated that one Englishman, unaided, did more for the lexicography of his nation than the forty Academicians of the French were able to do for theirs. *Sed "non quovis ligno fit Mercurius;"* "every one is not a Dr. Johnson."

Our last extract from this very interesting review, p. 537, is from an article called "Additions to the plants of Ireland since the publication of 'Flora Hibernica,' by J. T. Mackay, LL.D., A.L.S.

"1. *Alyssum minimum* (DC.). First found by Mr. F. Darley and Dr. Wright, near the farmhouse, Portmarnock, in 1817; and again in 1837.

2. *Hutchinsia petræa*. Old walls at Bandon, etc.

3. *Cochlearia grænlandica*. Rathlin Isle.

4. *Sinapis muralis* (Br.), *Diplotaxis muralis*, DC.

5. *Dianthus deltoides*. In a dry, hilly field near Cork; 1837.

6. *Euphorbia Peplis*. Garry's Cove, Waterford.

7. *Silene conica*. Sandy fields, Portmarnock, J. S. M.

8. *Silene noctiflora*. Near Tullamore, King's County.

9. *Sedum album*. Roofs, Antrim, and walls, ditto, with *Sedum reflexum*; 1837.

10. *Acinos vulgare* (sic in Rev.), *vulgaris* (*Calamintha Acinos*). Portmarnock.

11. *Asparagus officinalis*. Shore, Wexford, etc.

12. *Myosotis repens*.

13. *Medicago maculata*.

14. *Lathyrus palustris*. Banks of Lagan, Mr. D. Moore.

15. *Polygonum viviparum*. Ben Bulbin, Mr. E. Murphy.

16. *Ophrys muscifera*. Castle Comer, Rev. Mr. Despard.

17. *Epipactis grandiflora*. Dunneen, by Mr. G. Whitlaw.

18. *Calamagrostis lapponica*. Banks of Lough Neagh, Mr. D. Moore.
19. *Carex elongata*. Do. Do.
20. *Senecio* (sic scribitur vel imprimitur), *Senecio squalidus*. Cork, Mr. W. Alexander.
21. *Sisyrinchium anceps*. Woodford, near Loughrea, in great abundance. By James Lynan, Esq.
22. *Helianthemum canum* (*Cistus marifol.*, E. B.). Arran, Dr. Melville, in 1855.
23. *Erica ciliaris*. Craig-a-More, Mr. J. F. Bergin.
24. *Aspidium rigidum*. Near Drogheda, Miss Williams.
25. *Asplenium lanceolatum*. Near Cork, Mr. Woods and Dr. Kinahan.
26. *Simethis bicolor*. Near Derrynane, county Kerry, Rev. T. O'Mahony.
27. *Saxifraga nivalis*. Ben Bulbin, John Wynne, Esq.; D. N. H. Rev. 539."

This number contains also reviews of Captain M'Clintock's Arctic Discoveries, Ellis's 'Madagascar,' 'On Classification,' by L. Agassiz, Möllhausen's 'Journey from the Mississippi to the Coasts of the Pacific,' etc. etc. Some of these will be noticed at some future time.

Handbook of the British Flora. By GEORGE BENTHAM, F.L.S.
1858.

It has been from no intentional delay on the part of the 'Phytologist' that we are somewhat late in noticing this important work. We could have wished that the contributor upon whose assistance we relied, had been somewhat more prompt in replying to our invitation; still, we hope that, however tardy an account, it may be even now acceptable to the readers of the 'Phytologist.'

As stated by the author in his preface, there are three features in which the Handbook avowedly differs from any of the other British Floras.

First, Mr. Bentham thinks that the beginner (for whom his book is expressly meant) will not be able to make out the names of his plants, if he relies upon the arrangement and subdivision of the Natural Orders, Genera, etc., as given in the current Floras. So true is this remark, that the demand for Withering's work still continues, and we often hear it recommended as the only book from which a beginner can hope to teach himself

botany ; such facility is due to the use of the Linnæan method, adopted by Withering only of the current Floras. In fact it requires many years' practice before we can fully avail ourselves of the Natural System, or even understand the resemblances which are evident to the experienced botanist.

So Mr. Bentham has adopted that most excellent and precise plan of Lamarck's, called the *dichotomous* system ; artificial indeed in its working, but unequalled for the facility it affords to a student of only short experience in his craft.

We need hardly say that this method consists in dividing two by two any group or class, until the name of the genus or species puts an end to the search. We believe that incipient botanists will reap no small advantage from the use of this plan, and that in some respects it is even superior to the Linnæan, as regards the facilities it offers towards rightly naming a plant. The French are often our teachers in matters of neatness and practical science.

Next come the English names, which for the first time take precedence of the Latin ; and, moreover, these names are, many of them, of the author's own and his friends' coinage.

We think this innovation has led, in many instances, to the needless sacrificing of the older Celtic and Saxon terms, and to too free an importation of hybrid Latinisms. However, it is of some service to see the English names of the Orders standing on one page to face the Latin on the other.

With regard to a complete system of English generic and specific names, we cannot hope or wish to see it adopted. In their present form the specific names remind us of poor M'Gillivray's proposition of dubbing some of our birds afresh after the same strict fashion, "Raven Crow," "Daw Crow," "Rook Crow," etc. etc. ; but we have never met with an ornither who had adopted this nomenclature. Besides, we suspect Mr. Bentham's English names are full as difficult to learn as the Latin, without the advantage, which the latter gives us, of following a plant into the foreign Floras. So the beginner would have to go through his teaching all afresh, when he began to make progress in the science.

Thirdly, the number of species is greatly reduced. At this moment, when so great differences of opinion exist in this respect, it is not for us to censure Mr. Bentham. He has no doubt de-

duced his views from a far wider experience than we have had, and he is of course entitled to hold his own opinion. But when we find our botanist of world-wide experience addressing himself to the tyro, and recommending him to embrace, at his entrance into the study, the same creed which his master has taken years to arrive at, we are struck with the inconsistency; and we are tempted to say to Mr. Bentham, "Either teach your pupil genera only, or let him learn his details before he is allowed to generalize." We cannot here quote particular instances; suffice it to say that the number of British species of Flowering Plants and Ferns is given in the Handbook as 1,285, and we suspect our condensing author would willingly reduce them to somewhere about 1000. The professed model, in the estimate of the value and limits of a species, is stated to be the practice of Linnæus; so that everything has been done to bring the actual knowledge of our Flora into conformity with this supposed standard. We find, however, that, in many instances, Mr. Bentham has exceeded the canon of his model, and we fancy that, were the great Linnæus still alive, he would give a "passport" to many species which are ignominiously dismissed by Mr. Bentham.

We propose, at no long interval, to give in the 'Phytologist' what may be termed a "concordance" (rather "discordance") of British species, where will be plainly seen the differences in opinion now current, seeing that Babington has 1,495, where Watson has 1,425, Hooker somewhat fewer, and the Handbook only 1,175 (Cybele Brit. iv. 278); or, as given by Mr. Bentham, Babington 1,708, Hooker and Arnott, 1,571, himself 1,285.

A short outline is given of the general range of each plant; but we would caution our readers that this is far from precise, and cannot, any more than Nymann's 'Sylloge,' be used for determining a really difficult point about the nativity of a suspected plant. Recourse must in such cases be had to the local Floras of the district nearest our shores, *e. g.* of Normandy, of Belgium, of Holland, of the "West of France."

Too often the compiler of the general area is apt to commit the oversight of simply taking the name of his plant from a Flora, without making sure it is not a distrusted native there.

A short and serviceable introduction to the science and terms of botany is a most useful feature of the 'Handbook of the

British Flora.' Few botanists could in this matter have done so well as our author, and we do not doubt that this portion of his book will be gratefully appreciated by many country botanists, who do not care to procure two or three extra volumes, when they thought that one would be sufficient to initiate them into the study.

Contrary to the practice usually followed, no brands or marks of foreign origin are affixed to the suspected plants, though due notice is taken of their claims when treating of the stations and range of each species.

G.

A Sketch of the Natural History of Brighton and its Vicinity.

By MRS. MERRIFIELD. Brighton: W. Pearce, 1860.

The author, in her preface, states that it was not her aim to "give a *history* of the different natural productions of this district, but merely to indicate the species, both vegetable and animal, which have been found here." It is an extensive subject, and would form abundant materials for at least a dozen of volumes, if treated with historical and descriptive detail. This, however, was not the intention of the fair compiler, and she has evinced a sound discretion in confining her work within moderate bounds. Students in any one department or in several of the branches of natural science, provide themselves with manuals on the distinct and independent divisions which in their totality constitute what is called Natural History. These embrace a larger area, and are more comprehensive in the information they afford, than what is to be expected in a sketch which combines the substance of the whole range of the natural history of the British Isles.

The county of Sussex contains at least two-thirds of the species contained in the Fauna and Flora of Great Britain. The vicinity of Brighton probably contains three-fourths of the natural objects which are found in the entire county. Hence it may be inferred that the naturalist who has collected, examined, and arranged the subjects of any one of the departments embraced in this sketch of the Natural History of Brighton and its vicinity, has attained a not inconsiderable insight into that particular branch of natural science.

In the days when George the Third was king, and when George the Fourth was Prince of Wales, and made Brighton his marine residence, the fashionable way of reviewing works on all subjects, but especially on religion, history, politics, and literature, was to write an essay or a treatise on the subject discussed in the book, the name of which served as a text, a handle, or a title, to the lucubrations of the writer of the review. The reviewer's object was not to set before his readers an analysis of the work whose title stood at the head of his performance, but to show them what he knew or thought about the subject. This fashion was set by the 'Edinburgh Review' at the beginning of the present century; it was servilely adopted by the 'Quarterly Review,' and the practice of these two famous periodicals has been more or less followed down to the present time.

He would be esteemed a bold if not a foolhardy reviewer, who ventured to follow this, the almost universal custom of reviewers, in discussing the contents of the book before us. He would be more than a match for a modern Admirable Crichton who could successfully cope with Dr. Mantell in Geology, Dr. Harvey in Algology, Dr. Bell, Professor E. Forbes, and Mr. Gosse on Marine Zoology, Mr. Bowerbank on Zoophytes, Captain Knox on Ornithology, Mr. Mitten on Muscology, and other celebrities whose fame is not quite so widely extended as that of the above-named *savans*. The writer of this review will not make the Quixotic attempt at emulating these eminent authors, each of whom is great in his peculiar department. The reviewer of Mrs. Merrifield's work will briefly and plainly tell his readers what are the contents of the lady's book, and then state his estimate of the value of her labours in this extensive field.

Our author in a very graphic way tell us that her work is but a compilation: see her Preface. It is also stated that the lists of the twelve classes of subjects into which the whole is divided, have been derived from as many contributors, some of which have been mentioned above. Due acknowledgments are awarded to all contributors.

The authoress relies on Dr. Mantell for her abstract of the geology of the coast on each side of Brighton, between Shoreham and Newhaven, the downs, and the alluvial and diluvial formations of the river vales, etc., of the interior; Dr. Harvey is the authority for the algals of the coast and deep sea; on

zoophytes are quoted the late Dr. Johnston, and the before-mentioned later authorities; on star-fishes, the late Prof. E. Forbes; on crustaceans, Professor Bell; on fishes and birds, the late Mr. Yarrell; on the vegetation, Hooker and Arnott. These names stand in the very foremost ranks among the promoters of natural science in the present day. The resident naturalists who have contributed to the completion of the lists are Mr. Mitten, who furnished lists of phænogamous plants, ferns, and mosses; Mr. Unwin, who contributed lists of lichens, zoophytes, star-fishes, insects, land and fresh-water mollusca, etc.; lists of lepidopterous insects were furnished by Mr. H. Cooke, Mr. J. Winter, etc.; Dr. Gunther supplied accounts of marine mollusca; Mr. Pike seaweeds, etc.; the Reverend Messrs. Dennis and Hussey are honourably mentioned. This small book, as it may be called, of under 230 octavo pages, contains the entire zoology, botany, and geology of this part of the Sussex coast, downs, and wealden tracts.

Unlike the reviewers who sprang up at the beginning of the present century,—and the race is not, to use a scientific term, yet extinct,—the writer of this notice has read the book which he is reviewing: and he can assure his readers, be they few or numerous, scientific or unskilled in natural *lore*, that the work is not a mere catalogue of things represented by what the facetious and satirical portion among *littérateurs* call unpronounceable or crack-jaw words of formidable dimensions and inharmonious sounds.

We have now briefly, and in a comprehensive way, stated the contents of the work, and the authorities on which the statements are founded. To be brief, it may be said that it contains the names, the localities, the habits, etc., of the most interesting of the natural or native productions of this part of the country. It now remains for us to give our opinion of the way in which this has been done, and to state generally the claims of the work to public patronage, or rather to circulation among naturalists in general.

It cannot reasonably be expected that our readers, who have not read or seen or perhaps heard of the work, should have the same convictions about its value and usefulness as we entertain, who have read it carefully. We cannot even afford to give documentary proof such as the Greek simpleton gave of the quality of his house. He carried a brick in his pocket; it was not an

adequate sample of the stock he had for disposal, but it might have been a fair specimen of the material of which the house was built. We have no room for samples of the ware here recommended, and, even if we had ample space for quotations, none of the quotable passages would suit our pages.

Our readers are assured that the work has been tried on the *crede experto* principle, and it is confidently asserted that the buyer will not be disappointed when he either sits down to its perusal, or when, on his walks about this lovely tract, he takes it out of his pocket and dips into it while he may be resting his tired limbs. We would not commend a useless book; but, as "seeing is believing," let those who wish to know the exuberancy of this portion of the South of England judge for themselves. Here they will meet with accounts of the fowls of the air, the fishes of the sea and of the fresh-water streams and ponds, the reptiles, the insects, the plants of the land, and the vegetable and animal produce of the sea and rivers.

Our journal is botanical; but if it were ornithological, or even entomological, many interesting extracts might be taken from Mrs. Merrifield's work. The story of the Cornish baronet who danced a *pas seul* to the music of his own terrific screams among a dozen lobsters, crabs, and crawfish, disenthralled, in the dead of night, from the hampers in which they were stowed away, might be quoted. The story of the coastguardsman's dog and the fox is a short one, and is a good illustration of the sagacity of the canine race. This dog disturbed and hunted a fox, which ran to the cliff, threw himself partly over, hanging by his fore-paws to the margin of the precipice, in expectation that the dog would rush upon him, lose his balance, topple over, and be killed. The dog however was aware of the dangerous nature of the place, and instead of heedlessly flying on his victim, advanced carefully, and commenced biting the fox's paws, till at last Reynard let go his hold of the brink, fell to the bottom, and was killed.

The botany of the downs and that of the coast are separately treated. The most attractive plants of the downs are the following:—*Adonis autumnalis*, *Myosurus minimus*, *Helleborus fœtidus*, *Papaver hybridum*, *Arabis hirsuta*, *Medicago maculata* and *M. denticulata*, *Trifolium ornithopodioides*, *T. subterraneum*, *Hippocrepis comosa*, *Asperula cynanchica*, *Campanula* (*Specularia*)

hybrida, *Phyteuma orbiculare*, *Hyoscyamus niger*, *Veronica Buxbaumii*, *Linaria minor*, and *L. spuria*. Our authoress states that there is no representative of the genus *Mentha* on the downs. Some may be rather shy of adopting this report of the absence of so common a plant as *Mentha arvensis*. The Orchids in this district are numerous. Would some of our obliging correspondents send us a specimen of the Spider Orchis which grows about Piecombe, though not so common as the *bee* and *fly*, *Ophrys apifera* and *O. muscifera*? The other rare species of these curious plants found here, are *Orchis ustulata* and *O. fusca*. *Orchis incarnata* is also reported as a species which flourishes about Hurst. We do not profess to know this as a British Orchis, unless it may be a synonym for *O. latifolia*. *Herminium Monorchis*, another rare gem in Flora's crown, is also a production of these downs. A more startling novelty in this order is *Orchis laxiflora*, which is placed among the Orchids in the catalogue of plants, p. 200. We hope the compiler of this list will excuse the intimation of a doubt about this plant, and also about some of the above-mentioned, as to their being really natives of the downs of Sussex. They may be there, however, though this locality is not generally accredited by botanists as producing *Orchis fusca* and *O. laxiflora*.

The Ferns are said not to be numerous, but two of them are very interesting, being rarely found so far east and at so low an elevation in the latitude of Sussex. "*Ceterach officinarum* grows about Fulking, *Lastrea Thelypteris* at Albourne, and a single plant of *Asplenium viride* was once found growing on Danny House, but is now lost." We are further informed, that "the variety of plants found growing wild in this neighbourhood is accounted for by its having formerly been the residence of Ray, the naturalist." This will probably be news to some of our readers. It is so to us, and a list of the rarities about Danny House would be particularly acceptable. Some will consider the variety of plants apocryphal, and others will remember that although Ray the great naturalist did occasionally visit his friends living in places considerably distant from his own humble abode, he never enjoyed a residence so dignified as Danny House, the residence in his time of Mr. Courthorpe, with whom Mr. Ray spent some small part of the years 1667 and 1668. This time, viz. the end of 1667 and the beginning of 1668, was spent partly in

Sussex, partly in Kent, and partly in Warwickshire, with his intimate friend Mr. Willughby.

The plants growing on the coast are far more numerous and of greater interest than those of the downs. Besides *Glaucium luteum*, *G. phæniceum* was found in the summer of 1859, not far from Hove. See 'Phytologist' for January, 1860. *Cakile maritima* and *Crambe maritima* are also found here, along with *Cochlearia danica* and the very rare *Erysimum orientale*, which has been seen within the last ten years in great plenty at Wandsworth Steam-boat pier. See 'Phytologist' for November, 1859. *Sinapis muralis* (*Diplotaxis muralis*) is extending its range in England. *Frankenia levis* is also found on these shores. *F. pulverulenta* is also reported: but in this instance it is possible that there may be some mistake. *Honkenya*, a recent genus, is spelt in the sketch *Honkeneja*, for which precedents may be produced. We have gathered *Linum angustifolium* on the marly cliffs between Shoreham and Brighton, and saw in the same place the Squinting Cucumber, *Cucumis Coloquintida*. Purists may be shocked at the appearance of this vagabond among genuine natives of our British soil, but it has had the impudence to intrude itself into other places of our native land. *Erodium maritimum* is a rare sea-coast plant, but it is not strictly limited to maritime localities. *Trifolium subterraneum*, *T. maritimum* and the rarest of rare Trefoils *T. stellatum*, still grows abundantly near Shoreham. *T. scabrum* and *T. glomeratum* also grow here. *Vicia lutea* and *V. bithynica* are both recorded from this district. Both have been seen at Wandsworth and Battersea of late. *Sedum album* is mentioned as growing on the beach between Brighton and Shoreham, a rather unusual station for a mural and rupestral plant! *Bupleurum tenuissimum* and *Saxifraga tridactylitis* are also occupants of the coast, with *Eryngium maritimum* and *Smyrniolum Olusatrum*, the latter with black berries (seeds). This plant, viz. *S. Olusatrum*, bears black fruit, but its fruit is not a berry. *Crithmum maritimum*, *Erigeron canadensis*, *Erythræa pulchella* and *E. littoralis*, *Convolvulus Soldanella* and *Solanum maritimum*, a creeping procumbent variety of *S. Dulcamara*, abound less or more in this vicinity. *Schoberia fruticosa* (in the complete list called *Suæda mar.*) is also recorded. *Allium vineale*, with several rare Grasses, are reported from this rich locality, which well deserves a visit from the London botanist.

It is respectfully suggested to the author of these sketches and to the compiler of the botanical lists that there are some discrepancies between the text and the complete lists. It is not expected that all the names in the lists should appear in the text; but it is desirable that all the species entered in the body of the work should be entered in the lists, and also should appear under the same names. For example, *Campanula glomerata* is entered in the text, p. 128, and is omitted in the complete list, p. 198. *Schoberia maritima* is the name given in the text, and *Suaeda maritima* is that printed in the list. We miss *Verbascum nigrum*; is this common chalk-plant absent from so large a district abounding in chalk and gravelly soil? Again, are there no sandy hillocks and flats near Shoreham where *Saxifraga granulata* grows? Is this plant also absent? *Senebiera didyma* is in the text, but does not appear in the list. Is it generally known that *Stellaria nemorum* grows in the very south of England? If so, the learned author of the 'Cybele' will, in his new edition of that work, have to extend its bounds. This remark is also applicable to *Hypericum dubium*. *Erodium cicutarium* is omitted from the list, but it appears in the text. These blemishes will disappear in the next edition, which we hope will soon be wanted. On p. 118 *Cruciferæ* is printed for *Cruciferæ*. The Yellow Centaury, *Chlora perfoliata*, is not confined to the south of England: see p. 130. The writer of this, while botanizing in Cheshire, which is as near the north as the south of England, saw hundreds of the plant in a pasture-field; not so fine examples as those that grow in Kent, Sussex, and the Isle of Wight, but quite as plentiful—even more so. At the risk of being thought hypercritical, the writer presumes to point out another error in etymology or rather in typography; *ανεγελαιω* should be *αναγελαιω*. We believe that the name *Anagallis* is from *αγαλλις*, an onion, or some plant like garlic, rather than from the verb "I laugh." Again, *Habenaria clorantha*, another Greek derivative, should be *H. chlorantha*, from the same root as the generic name of *Chlora perfoliata*, Yellowwort. The author, in her Preface, p. vii., directs the reader's attention to the "Errata and Corrigenda:" this is our excuse for noticing so many.

In conclusion, we beg to encourage the fair authoress, and at the same time warmly to recommend the work to the notice of our readers, and especially to our London members of the confraternity who purpose spending a day or two or a week in looking

at the native productions of the coast and the downs adjoining Brighton. The work is accompanied with a good clear map descriptive of both sea and land. The book is well printed, and the initials of the chapters are embellished with neat cuts illustrative of the subjects that follow.

J. A.

A Priced Catalogue, with brief descriptive and cultural remarks, of the extensive collection of Stove, Greenhouse, and hardy Exotic and British Ferns: grown for sale by ROBERT SIM, Nurseryman, etc., Foot's Cray, S.C., Kent.

This comprehensive catalogue of Ferns contains 818 distinct articles (species and varieties) with brief distinctive characteristics of each, with the common synonyms from the works of Messrs. Smith and Moore. The British species, with their varieties, occupy the first sixteen pages of this ample list, which contains in all sixty-four pages.

Athyrium Filix-fœmina has in this collection the large number of twelve descendants. Mr. Moore enumerates in his last edition of his very useful Handbook as many as twenty-three.

Lastrea dilatata, Presl, has produced seven varieties in Mr. Sim's collection.

Mr. Moore's varieties are upwards of a score. *Lastrea Filix-mas*, one of the very commonest, and next to the Lady-fern the most magnificent and elegant of our indigenous species, boasts nine varieties in this collection, several of them being of considerable pecuniary value. Here are also some lovely forms of the elegant *Polystichum angulare*. Almost all the varieties of this species are of great commercial importance, and objects of interest to the genuine fern-collector.

Scolopendrium vulgare is, however, the prince of British ferns among the lovers of varieties. Mr. Sim possesses about half a hundred of these fern-treasures. No. 125, *S. ramo-marginatum*, is valued at from one to two guineas per plant.

It is very probable that the varieties of ferns, like those of roses, strawberries, and cereals, are endless. In collections they will constantly occur, though not perhaps always so decidedly distinct and so unmistakeably desirable as to be uniformly satisfactory to the nurseryman and the amateur.

Mr. Sim's renown as an eminently successful cultivator for

commercial and exhibitionary objects does not rest upon his collection of British Ferns, excellent and varied though these be. His exotic examples are of wonderful beauty, marvellous for their exquisite symmetry, delicacy in form, and many for the luxuriance of their growth.

A visit to Foot's Cray and to its nursery is a treat which will be enjoyed by every genuine lover of the graceful and lovely in the vegetable creation ; it will not speedily be forgotten by those who have had the rare happiness of seeing so superb a collection. Some of the Australian, New Zealand, and Philippine-Island Ferns are of matchless interest, extreme rarity, and of fabulous value. The prices are not fabulous to their owner, nor to those fortunate possessors of wealth who can afford to buy such costly commodities, but the prices would appear fabulous to those who are uninitiated or who cannot indulge in such expensive gratifications.

Ferns are desirable luxuries, and those who cultivate a taste for them and similar objects seldom indulge in vulgar degrading enjoyments. The indulgence of refined taste may be expensive ; it physics the purse, but it has a considerable influence upon the higher qualities of humanity : it is rarely combined with ignoble or unworthy pursuits.

This Catalogue is strongly recommended as a model to all compilers of Nursery lists. Its arrangement is systematic, the descriptions are very intelligible with but slight traces of technicality, and the remarks on culture, general treatment, preservation, etc., are highly valuable, being the result of many years' successful cultivation.

P.

BOTANICAL NOTES, NOTICES, AND QUERIES.

SCILLA AUTUMNALIS AND S. VERNA.

The different season for flowering, and the absence of bracteas to the pedicels, will readily distinguish the former from the latter of these two species. Unlike the latter, the former is a southern plant, neither restricted to the seacoast nor to the western side of the kingdom. Carnarvonshire seems to be its limit to the north, on the authority of Ray alone, and it has not yet been detected in Ireland.

Scilla verna, though common enough on most of our western and north-western shores, from Cornwall to the Shetland Islands, is rarely found on our eastern coasts, except towards the north, where, as at Dunstanboro' Castle, in Northumberland, it has been discovered in abundance (Loudon's Mag. Nat. Hist. vi. p. 19). Hence it may be expected to

occur in this island (Wight), which is nearly on the meridian of that portion of the kingdom.—*Bromfield's Flora Vectensis*.

To the Editor of the 'Phytologist.'

Sir,—On looking through my stock of duplicates, which has already been gleaned some dozen times for numerous correspondents, I find I have still left a considerable number of specimens of the undermentioned species, many of which may be acceptable to some of the readers of the 'Phytologist.' I shall be happy to send any half-dozen of them to any address, on the principle "First come, first served":—*Anemone Pulsatilla*, *Hutchinsia petræa*, *Arabis petræa*, *Dianthus cæsius*, *Astragalus alpinus*, *Rubus Chamæmoris* (in flower and fruit), *Gnaphalium supinum*, *Erica vagans*, *Primula farinosa*, *Pyrola maritima*, *Carex rariflora*, and *C. capillaris*.

2, Connaught Place West, London, W.

J. BARTON.

T. Kirk, Coventry, asks the following question:—Do you know any botanist having spare specimens of *Orchis tephrosanthos*, *hircina*, *militaris*, etc. etc., *Rosa bractescens*, *Salix arbuscula*,—to exchange for *Equisetum Moorei*, *Potamogeton lanceolatus*, and other good plants?

A correspondent asks the following:—Do you know the undermentioned, either in the original or translated—*E Joannes à S. Geminiano de vegetabil. et plant.*, etc.?

DANGEROUS FUNGI.

Mr. Newton, coroner, held an inquest a few days ago, at Collingham, Notts, on the body of Thomas Batter, a boy eight years of age. The father of the deceased said his son Thomas had accompanied his brother into the fields to look for mushrooms. They found a quantity and returned home with them. At dinner-time the boy complained of a pain in his head and could not eat anything. At seven o'clock the same evening, upon his parents undressing him, he screamed every time he was touched, and appeared in great agony, shrinking from every one. His mind became affected, and at midnight he expired. The surgeon made a *post mortem* examination of the body of the deceased, and arrived at the conclusion that the deceased met with his death from partaking of a poisonous fungus which he mistook for a mushroom.—*Times*.

WALLFLOWER GROWING ON THE LIVING ROCK.

It seems to be noticed as remarkable (see 'Phytologist,' vol. iv. p. 6) that Mr. Sim found *Cheiranthus Cheiri* on the living rock. It grows profusely on the precipitous part of St. Vincent's Rock, at the end next Bristol.

J. S. M.

Does S. B. imagine that anybody can understand the grandiloquent twaddle of "Proverbial Philosophy" besides Mr. Martin H. Tupper himself? The only suggestions I can offer are that possibly by the 'Crocus' the proverbial philosopher may mean *Colchicum*, and by 'Nightshade' *A. Belladonna*. All others are quite beyond my grasp.

T. F. R.

Communications have been received from John Sim; Sidney Beisly; Mrs. Merrifield; Rev. R. H. Webb; A. G. More, F.L.S.; John Barton; S. Wood; John Lloyd; Robt. Brown. (Note.—Mr. Brown's communication arrived here (Chelsea) too late to appear in this number; it will be published in our next month's issue.—ED.)

FLORA OF THE ISLE OF MAN.

Notes on the Isle of Man and its Flora.

The Isle of Man,—*Mannin*, or *Ellan Vannin*, in its own native tongue,—lies, as a glance at the map will show, almost in mid-channel between England and Ireland. The distance from Peel, on its western shore, to Lough Strangford, in Ireland, is 27 miles; from Ramsey, on its eastern coast, to Whitehaven, 32 miles; from Point of Ayre, its northernmost point, to Burrow Head in Scotland, 16 miles; and from the Calf islet, at its southern extremity, to Holyhead, 45 miles. The centre of the island is in latitude $54^{\circ} 15' N.$ and in longitude $40^{\circ} 30' W.$ Its greatest length is 33 miles, its greatest breadth $12\frac{1}{2}$, and its surface area about 200 square miles.

Geologically speaking, three-fourths of the island consist of a series of schists, through which bosses of granite protrude in two places, namely, at the Dhoon in this immediate neighbourhood, and on the eastern side of the mountain called South Barrule. The Old Red Sandstone is visible on a narrow strip of the western coast near Peel, and the mountain limestone is developed over a small space on the southern shores near Castletown. The four northernmost parishes constitute an almost level plain of about 50 square miles; in some parts swampy, the fen-district of the island, locally termed 'Curraghs;' in other parts covered with the drift-gravel and marls of the Pleistocene series. Near the northern edge of this plain rises a ridge of low undulating hills of sand and gravel, and beyond them lies the Ayre, an almost barren waste of sand, and the extreme north point of the island. From the southern borders of the level the mountains rise abruptly,—attaining their greatest height in Snaefell, 2004 feet, and North Barrule (under whose huge shadow I write), 1870 feet,—and occupying the greater part of the surface of the island. Into their heart are cloven frequent chasms,—the lovely glens, great and small, which are some of the chief charms of our dear wild island home. Down each of these dances and leaps a crystal stream, in haste to end its brief, bright, giddy course in the majestic bosom of old Father Ocean. Fringing their brinks, and clambering up the glen-sides, are our trees to be sought; elsewhere, alas! on our tempest-swept mountain-sides and cliffs they are few and far between.

The climate is humid, as might be expected in so elevated an island, but temperate and equable withal. The mean annual rainfall is something over 25 inches; the mean temperature 49° Fahr.,—the mean for the three summer months being 56° , while for the winter quarter it is as high as 42° . The following remarks on this subject, by the Rev. J. G. Cumming, formerly of King William's College in this island, are of sufficient interest to need no apology for their introduction here, especially as the facts therein recorded will doubtless prove a somewhat startling discovery to most of the readers of the 'Phytologist':—

"Professor W. H. Dove, of Berlin, has compiled and published a series of tables of temperature for each month, season, and year, at a very large number of places on the surface of the globe, and he has also projected upon maps the remarkable curves of the lines of equal temperature called isothermal, isothermal, and isochimenal lines. The study of these lines lets us into some interesting facts in the science of Climatology. St. John's, in Newfoundland, is 7° further south than the Isle of Man; and yet while the mean winter temperature here is almost 42° Fahr., that of St. John's is only $23\frac{1}{4}^{\circ}$, *i. e.* nearly 9° below the freezing-point. Even in their summer they are 4° colder than we are; and their mean annual temperature is only $6\frac{1}{2}^{\circ}$ above the freezing-point, whereas ours is 18° above it. . . . The Isle of Man is situated upon a culminating point of one of these curved lines, the isothermal of 50° , or rather 49.84° , as it is given in Professor Dove's tables. The fact of its forming the culminating point shows that there is no other place in the same parallel of latitude which has so high a mean annual temperature. There are places on the same parallel whose summer is hotter, but their winters are also so much colder, that on striking a balance the mean is in favour of the Isle of Man. Still more worthy of observation is the remarkable evenness of our temperature: there is hardly another spot in Europe, as shown by Professor Dove's tables, which presents so slight a difference between the mean summer and the mean winter temperature. It is somewhat singular that the places which present a similarly equable temperature are the extremes of Great Britain, viz. the Orkneys and the neighbourhood of the Land's End. We may remark, however, that the mean summer temperature of Truro, in Cornwall, is half a degree lower than ours, though it is situated 4° to the south of us:

whilst the Orkneys are more than 4° colder. We are accustomed to regard Italy and the south of France with something of an envious feeling, because of the reputed warmth of their winters; but what is the fact? The noted Montpellier, the great resort of valetudinarians, and which is 11° south of us, has for its mean January temperature 42° ; our own is nearly 41° . Again, the January temperature of Rodez (south of France), more than 12° south of us, is only 32° , *i. e.* 9° colder than we are. At Milan the January temperature is but $33\frac{1}{4}^{\circ}$, whilst their mean July temperature rises to nearly 75° ,—a difference of extreme temperature amounting to upwards of 41° ; yet the extreme of our hottest and coldest months is not 20° . Even the mean temperature of Milan is more than $5\frac{1}{2}^{\circ}$ colder than the Isle of Man. Strangers who merely look at our northerly position on a map, or, passing our shores, observe our almost treeless country and our overcast sky, are apt to form an unfavourable opinion of the island as a permanent residence. Such an opinion is, however, a very false one. No place can be more healthy.”

Owing to the remarkable mildness of the winters, the fuchsia, the myrtle, and other exotic shrubs, flourish and flower freely in the open air. The most unobservant visitor can hardly fail to have noticed the luxuriance of the fuchsias, which are the most conspicuous ornaments of the cottage gardens in many parts of the island, attaining a height of 12 or 14 feet, and sometimes employed, in the neighbourhood of Douglas, to form hedges between garden and garden, for which purpose they answer admirably, and are, I need hardly say, highly ornamental. During the very mild winter of 1858–9, the fuchsias in my garden here, at an altitude of 500 feet above the neighbouring coast, and growing on a slope exposed to the fury of every wind that blows, retained their leaves until they were pushed off by the new foliage of the spring.

The Flora of the island has found no chronicler, so far as I can ascertain, save and except a paper, only too brief, on the Mosses, by Mr. Davis, which appeared in your pages; and a very slight general notice by the ever-to-be-lamented Edward Forbes, himself the pride of this his native isle, which is appended to Mr. Cumming’s ‘The Isle of Man.’* Less fortunate than her Sar-

* ‘The Isle of Man, its History, Physical, Ecclesiastical, Civil, and Legendary; by the Rev. J. G. Cumming, M.A., F.G.S., etc.; published by Van Voorst, 1848. A work of great interest to all who would inspect the island geologically.

nian sisters, Mona still waits her Babington. This is not perhaps to be wondered at; for we may as well at once candidly confess, that in spite of all advantages of climate and surface her native flora is neither numerous, well-marked, nor rare, and therefore, except to the algologist, not very attractive. Nevertheless, *teste* the indisputable authority of Professor Forbes: "Considered with respect to the British flora generally, and especially as bearing on the geological history of that flora, it is not unimportant. The greater part of the plants of the British Isles are colonists from Central Europe. They emigrated hither after the upheaval and over the upraised bed of the Pleistocene Sea. Of such plants, as might be expected, the rarer species are to be met with in the eastern English counties, whilst those only capable of the widest diffusion, and consequently of becoming commonest, found their way to Ireland and the Isle of Man before the breaking-up of that portion of the upraised Pleistocene Sea-bed which occupied the area of the now Irish Sea. This event happening before some plants generally common in England had diffused themselves so far, excluded them from the Manx flora. Before this upheaval of the Pleistocene Sea-bed, such parts of Britain as were above water existed in the condition of islands in an ice-charged sea, or of land connected with other land very far north, whence a vegetation of a boreal or arctic character were derived. This vegetation still remains on the summits of the Scottish, Cumberland, and Welsh mountains, and consists of alpine plants in (from?) the north of Scandinavia. These plants, in the north of Scandinavia, where climatal conditions nearly similar to those which prevailed within our area during the Pleistocene epoch are still maintained, are there seen, not only on the mountains, but growing down to the edge of the shore. In the Isle of Man we have no trace of this flora. There are no truly alpine plants upon our mountains, which in all probability were during some part of the Pleistocene epoch wholly submerged.

"In the south of England and of Ireland there is a flora consisting of such plants as are commonest in the West of France, and which must have emigrated at the time of the union of those parts of our islands with the continent. Of such we have no traces on the Isle of Man; nor yet of the peculiar Asturian flora, which gives a character to the vegetation of the hills in the west of Ireland.

“The few rare Manx plants belong to an assemblage, the history of which has not yet been developed. They are essentially *western*, either peculiar to the western parts of Britain and to Ireland, or found chiefly on the western and south-western coasts of Europe. They may possibly be fragments of the flora of the great western extension of Europe, the existence of which geological investigations have rendered probable, during a period beginning about the close of the Miocene epoch, and terminating just before the historical. Our rarest plants, as the *Sinapis monensis*, *Campanula hederacea*, *Pinguicula lusitanica*, *Euphorbia portlandica*, and *Scirpus Savii* are instances. *Radiola Millegrana*, *Centunculus minimus*, *Linum angustifolium*, and *Carum verticillatum*, all plants worth gathering, were probably companions of these.”

Thus far the Professor; let me now draw this rather long paper to a close by adding the localities of some of our less common species, for the benefit of intending visitors.

Papaver somniferum. A troublesome weed in gardens, but doubtless an alien.

Fumaria capreolata. Above the mouth of Ballure Glen and elsewhere, but not frequent.

Crambe maritima. Shore below Kirk Michael. “Near Dalby,” *Forbes*.

Thlaspi arvense. Sandy fields, rarely. Near Ballaugh Rectory.

Cochlearia officinalis, *C. danica*, *C. alpina*. Sea cliffs. The last only occasionally, as near Peel, Port Soderic, and Coshnahowin.

Lepidium campestre. As common as *C. Bursa-pastoris* in this parish and in other parts.

Lepidium Smithii. With the last, but less common. Near St. Jude's, Andreas. “Castletown,” *Forbes*.

Erysimum cheiranthoides. Roadsides, Ballaugh and Jurby. “Probably introduced,” *Forbes*.

Brassica (Sinapis) monensis. The Lhen, Andreas. Cranstal Point, etc. Local but abundant.

Reseda fruticulosa. “Near Castletown, and on a wall at Ballaugh Rectory,” *Forbes* (1848). Frequent on banks and field-borders in Ballaugh and Andreas (1859).

Viola lactea. Jurby, Bride, and Andreas, frequent.

Viola Curtisii. Fields. Creggins, Malew. Kirk Michael. Far less frequent than *V. arvensis*.

Viola lutea. “On the mountains,” *Forbes*. North Barrule.

Drosera rotundifolia. Boggy ground, everywhere.

Polygala oxyptera. "Frequent in sandy fields, Ballaugh," *Forbes*.

Silene anglica. Cornfields, Ballaugh and Jurby. Rare.

Sagina maritima. Sea cliffs. Banks' How, Port Soderic. Maughold Head, etc.

Honckenya peploides. Sandy shores of the north, plentiful.

Spergularia marina. Sea-cliffs, etc., abundant. Peel Castle.

Spergularia rubra. Cornfields, occasionally. Maughold and Lezayre.

Stellaria uliginosa. Swampy fields. Below Christ's Church, Maughold, etc.

Stellaria nemorum. Ballure Glen. Ballaglass waterfall.

Cerastium semidecandrum. Walls, everywhere.

Cerastium tetrandrum. 'The Brows' north of Ramsey. Near the Lhen, Andreas.

Cerastium arvense. Sandy fields near the sea, Ballaugh, etc. "Near Castletown," *Forbes*.

Linum angustifolium. Banks' How. Near Peel. "On the summit of the cliffs above Derby Castle, abundantly," *Forbes*.

Radiola Millegrana. Wet places. Douglas Head, Banks' How, Sulby Glen, etc.

Lavatera arborea. Spanish Head, and the Calf.

Malva moschata. Frequent, especially near the sea.

Hypericum Androsæmum. Frequent. Port Soderic. Glen Aldyn. "In many places, on all soils," *Forbes*.

Hypericum humifusum. Banks, fields, and gardens, abundant. Maughold, etc.

Hypericum pulchrum. Cliffs, banks, fields, etc., everywhere.

Hypericum elodes. Bogs, common. Glen Shone, and fields below Christ's Church, Maughold, in profusion.

Geranium pusillum. Scarlett, near Castletown. In the garden, Christ's Church Parsonage.

Erodium maritimum. On the limestone, Scarlett and Poolvash.

Oxalis Acetosella. On open sunny banks,—surely an unwonted habitat.

Ulex nanus. Among the heather, everywhere.

Melilotus vulgaris (leucantha). "Occasional, and apparently introduced," *Forbes*.

Trifolium fragiferum. Near the Dog Mills, Kirk Bride. Ballaugh, etc.

Ornithopus perpusillus. 'The Brows,' north of Ramsey, and elsewhere on the sand.

Vicia lathyroides. With the last, often abundant.

Vicia angustifolia. Sandy fields, rarely. Ballaugh.

Vicia Cracca. A most persistent and annoying garden weed here, peering up everywhere. I have not observed it in this character before.

Rubus carpinifolius and *R. corylifolius*. Abundant.

Rubus glandulosus (Koehleri). "Not uncommon on a clayey soil," *Forbes*.

- Rubus idæus*. Ballure Glen.
- Rubus cæsius*. Glens and mountains.
- Rubus saxatilis*. Glen at Bishop's Court. "Sulby Glen," *Forbes*.
- Tormentilla reptans*. Banks and woods, common.
- Rosa tomentosa* and *R. spinosissima*. Very abundant.
- Epilobium angustifolium*. Glens and streams. Near the limekiln, Cornah Harbour.
- Epilobium alsinifolium*. Head of Sulby Glen.
- Circæa lutetiana*. Ballure Glen, etc.
- Montia fontana*. Wet places. Below Christ's Church, Maughold, etc.
- Ribes Grossularia*. Hedges, Maughold, Lezayre, etc.
- Sedum Rhodiola*. "Occurs near Peel," *Forbes*.
- Sedum anglicum*. Very abundant on field-banks, cliffs, etc., everywhere.
- Cotyledon Umbilicus*. In the greatest profusion, especially in this neighbourhood. Very luxuriant in a dry ditch between the Parsonage, Ramsey, and Cloughbane. The 'Penny Wall' is in the highest esteem as a medicinal herb throughout the island.
- Saxifragaceæ*. Of this family only *S. tridactylites* and *C. oppositifolium* are found with us,—a striking corroboration of Professor Forbes's remark on the absence of *alpine plants* (vid. sup.).
- Eryngium maritimum*. Sandy shores of the north.
- Smyrniolus Olusatrum*. About Ramsey.
- Helosciadium nodiflorum*. Ditches in the Curraghs, Ballaugh and Jurby.
- Carum verticillatum*. Moist meadows. Below Christ's Church, Maughold, very abundant.
- Ænanthe pimpinelloides*. "Wet places by the sea," *Forbes*. Between Banks' How and Clay Head.
- Ænanthe crocata*. Stream-sides, frequent. Ballure Glen. Ballaglass Glen.
- Fœniculum vulgare*. Roadsides near houses, occasionally.
- Crithmum maritimum*. Sea-cliffs, often abundant, as near the Port Moar, in this parish.
- Lactuca muralis*. Ballure Hill.
- Carduus acanthoides*. Fields and waste ground, but not common.
- Carduus tenuiflorus*. Common.
- Carduus Marianus*. Sandy fields in the North. A garden weed, Christ's Church Parsonage.
- Onopordum Acanthium*. "Near Ramsey," *Forbes*.
- Artemisia gallica*. Rocks near Seafield, Kirk Santon, abundant.
- Gnaphalium dioicum*. Mountains.
- Gnaphalium margaritaceum*. Banks between Ballachurry and Andreas Church.
- Pyrethrum maritimum*. Sea cliffs, abundant.
- Bidens tripartita*. Ditches in the Curraghs.

Wahlenbergia hederacea. Glen Aldyn.

Jasione montana. Banks, roadsides, etc., abundant.

Erythræa latifolia. Sea-cliffs and sandy brows, but far less common than *E. littoralis*.

Convolvulus Soldanella. Sand-hills. Ballaugh and Point of Ayre.

Hoscyamus niger. Poolvash.

Verbascum Thapsus. Near Malew Church. "Mouth of Sulby Glen," *Forbes*.

Veronica scutellata. Ditches, etc. Below Christ's Church, Maughold.

Veronica hirsuta. Cliffs near Port Soderic and Ballacreggan, Kirk Braddan.

Euphrasia officinalis. "A curious tetragonal var. of this plant frequent in sandy fields, Ballaugh," *Forbes*.

Pedicularis palustris, *P. sylvatica*. Wet places. The former occasionally; the latter everywhere.

Digitalis purpurea. In wonderful profusion, especially in this neighbourhood.

Antirrhinum majus. Ruins of Rushen Abbey.

Linaria Elatior. Cultivated ground; not very common. In the garden, Christ's Church Parsonage, Maughold.

Orobanche major. "Near Ramsey," *Forbes*.

Lycopus europæus. Ditches in the Curraghs.

Mentha Pulegium. Marl-pits, Ballaugh and Andreas.

Calamintha Nepeta. "Roadside between Ramsey and Kirk Michael," *Forbes*.

Lamium intermedium. Common,—banks, gardens, waste places, etc.

Galeopsis versicolor. Potato-fields, rarely. Lhergey Dhoo, near Peel. Bwoail-e-velt, Maughold.

Stachys ambigua. Ditches and wet places in the north, frequent.

Scutellaria minor. "Damp ravines opening to the sea," *Forbes*. Banks' How, etc.

Myosotis. All the species but *alpestris* and *sylvatica*. *M. repens* in ditches on the Curraghs; the rest everywhere.

Symphytum officinale. Stream-sides. Ballaglass Glen, etc.

Pinguicula vulgaris. Boggy places everywhere, abundant.

Pinguicula lusitanica. Wet places near the sea, Banks' How and elsewhere north of Douglas. Glen Aldyn.

Primula vulgaris. With crimson-lilac flowers, in a small plantation on the Lough-na-Mollough-road, near Ramsey.

Lysimachia nemorum. Glens, frequent. Ballure Glen, Glen Shone, etc.

Anagallis tenella. Boggy places. Profusely in fields behind Christ's Church, Maughold.

Centunculus minimus. Wet places on gravel, rarely.

Samolus Valerandi. Crevices of sea-cliffs. Port-e-Vullian. Maughold Head. Ballacreggan, etc.

- Glaux maritima*. The Lhen, Andreas. Cranstal Point, etc.
Atriplex littoralis. Sandy shores of the north.
Salsola Kali. With the last.
Polygonum Raii. Sea-shore; Derbyhaven and Ballagh.
Empetrum nigrum. Snaefell. Foxdale, etc.
Euphorbia portlandica. Sandy shores, occasionally.
Euphorbia exigua. Sandy fields, occasionally. Near Marlew Church. In the garden, Christ's Church Parsonage, Maughold.
Salix pentandra. "Sulby Glen," *Forbes*.
Listera cordata. "Has been found on Snaefell," *Forbes*.
Allium ursinum. Plantations. Near Braddan Church. Bishop's Court.
Scilla verna. This little gem, with *Armeria maritima* and *Cochlearia*, clothes the summits of most of our sea-cliffs with an enamelled and perfumed carpet in May and June.
Alisma ranunculoides. Ditches on the Curraghs, etc., frequent.
Sparganium simplex. With the last.
Juncus maritimus. Scarlett.
Narthecium ossifragum. Wet meadows and boggy places, everywhere.
Scirpus maritimus. The Lhen, Andreas.
Scirpus setaceus. Wet places, frequent. Fields behind Christ's Church, Maughold.
Scirpus Savii. "Damp ravines opening to the sea, frequent," *Forbes*. Douglas Head. Banks' How, etc.
Carex Ederi. Wet meadows. Behind Christ's Church, Maughold.
Phleum arenarium. 'The Brows' north of Ramsey, and elsewhere on the sand-hills.
Glyceria (*Triticum*, Sm.) *loliacea*. With the last.
Polypodium Dryopteris. Mountains and glens, frequent.
Lastrea Thelypteris. Boggy places. Ballure Glen, etc.
Asplenium marinum. Rocks and caves all round the coast.
Adiantum Capillus-Veneris. "Glen Meay, and caves at Santon," *Forbes*.
Osmunda regalis. Boggy places and streamsides. Glen Aldyn. Balia-glass Glen, etc.
Botrychium Lunaria. Hilly pastures. Sulby Glen, etc.

It may be worth while, in conclusion, to remark, that some common English plants, *e. g.* *Lamium album* and *Primula veris*, are unknown here as natives; others, as *Anemone nemorosa*, *Solanum nigrum* and *S. Dulcamara*, are very rare.

Christ's Church Parsonage, Maughold, Isle of Man,
April, 1860.

HARROW PLANTS.

Remarks on the List of Harrow Plants reprinted in 'Phytologist,' p. 110.

Corydalis lutea, from what is said at p. 118, requires the *.

Coronopus didyma. The omission of *C. Ruellii* renders it probable that the former name has been misapplied.

Barbarea arcuata. There is a variety of *B. vulgaris* with patent pods liable to be mistaken for the true *B. arcuata*, which has much larger flowers than *B. vulgaris*. Which of the two occurs at Harrow?

Brassica Rapa and *B. Napus* surely require the *, if not the brackets of exclusion.

Sinapis nigra. Is this ever grown as a crop at Harrow? Usually found along damp hedges rather than as a colonist. Is *S. alba* absent?

Viola tricolor. "In gardens," yet the * is omitted. Is this the degenerated garden pansy?

Sagina. Is *S. apetala* not found upon the same "old walls" that produce *S. procumbens*?

Acer Pseudoplatanus probably requires the *.

Prunus insititia seems also very dubiously wild. The Bullace is apparently often supplied by nurserymen for planting in field hedges along with the blackthorn.

Rosa villosa. Can this be *R. tomentosa*, of which there are so many varieties?

Cratægus. Is it intended to press its claims to rank as a distinct species? Few English botanists are likely to accept it as more than a *var.*

Ribes rubrum and *R. Grossularia*. It would be interesting to know something of their title to be considered wild.

Sedum reflexum. The * is surely required for such a locality as "old walls." It is to be remembered this *Sedum* is, in its native habitat, a subalpine species.

Viburnum Opulus. Why should this of the two pass as native, when its stations are usually in *damp* woods? If the objections to admitting *V. Lantana* as indigenous depend upon its being a "chalk plant," there are several others in the list to show the presence of calcareous ingredients in the soil, *e.g.* *Hypericum*

hirsutum, *Bryonia dioica*, *Plantago media*, *Sison*, *Pastinaca*, *Verbena officinalis*, etc.

Tragopogon porrifolius. Not indigenous; is it?

Arctium. Is it possible there is no other species?

Vinca minor. Introduced?

Verbascum Thapsus. Is it cultivated for ornament, or medicinal use? Requires the * surely.

Veronica Buxbaumii also has no brand, though doubtless an introduced plant at Harrow, as elsewhere in England.

Myosotis sylvatica. "Roadsides" seems a very unlikely kind of station. Can *M. arvensis* have been gathered instead?

Atriplex Babingtonii. It is hardly possible this seaside species can have occurred so far inland; but our confidence in the right naming of the plants in this genus is still further impaired by finding *A. hastata*, *A. patula*, and *A. angustifolia* given as if their names corresponded to three distinct species; it being well understood that the name *hastata* is given by continental botanists either to what we call *A. deltoidea* (including the *A. hastata* of Babington's Manual = the *A. patula* of Smith), or to the *A. patula* of Smith separately; thus the *A. patula* of Linnæus is left to represent the *A. angustifolia* of Smith, and clearly one name is supernumerary in the Harrow List.

Fagus sylvatica. If planted only, requires some brand.

Juncus. It is indeed surprising to find that in spite of the presence of a canal, only three species have been found. May we hope that, with the experience of another two or three seasons, the writer will be able to register a very considerable increase to his local catalogue, as we are sure he may well look for certain additions among the *Junci*, *Potamogetones*, and *Gramina*. 385 species can hardly be the complete census for a neighbourhood, where, it is true, most of the land is under grass, and where not half-a-dozen really scarce plants have been found. But, even with the omission of several varieties that do duty for species, it is hardly likely that the actual number is far short of 500 in any "neighbourhood" (within a walk of head-quarters) situated in the south of England.

If these remarks should meet the eye of the botanist to whom we are indebted for the first detailed account of Harrow Botany, I sincerely hope that they will not be mistaken as implying any censure upon the writer, but will rather bring some explanation

upon the several points above alluded to, and incite the same explorer to renewed observation. A.

CHICKWEEDS.

See to the Chickweeds.

Perhaps nearly every reader of the 'Phytologist' thinks he knows quite enough about *Stellaria media*, one of his earliest acquaintances, and such a common weed as it is.

It is, however, the very object of our series of extracts from Boreau (upon *Draba*, *Viola*, *Ranunculus*, etc.) to draw renewed attention to the exact discrimination of some of the commonest plants, which few people think it worth while to examine at all. And though it is easier to adopt the method of Mr. Bentham, who confiscates both species and varieties at once, yet it is believed that, for those who care to make British Plants a real study, there are three great advantages derivable from a diligent attention to common plants.

First, we hereby train the mind to the practice of that accuracy which is so essential to science.

Secondly, there is provided ample occupation for the local botanist.

Thirdly, by this means are to be collected the items of evidence upon which eventually must depend any attempt at establishing something like agreement as to the limits and number of species, it being notorious that those who are at present most disposed to "lump" species are usually those who have least practical acquaintance with the plants, and that their operations are too often the merest guesses. At the same time it cannot be denied that many species have been recently far too much subdivided, and that it is equally the fault of some "splitting" botanists to have established species with too short experience. Still for all that, nearly all the progress recently made in the knowledge of our British Plants is owing to the latter of the two "schools," and much will have been gained if we but lay the foundation for future experiments by registering all the "forms" which we can find; thus securing a starting-point for observations upon the variability and permanence of the true species. Common plants, above all others, are likely to furnish data for such in-

vestigations, because from being more dispersed they exist under more varied conditions, and are under the eyes of a greater number of observers.

Such being then the importance of the subject, I trust no apology will be needed for introducing to the readers of the 'Phytologist' three different plants, which are in this country called indiscriminately *Stellaria media*, the first of them being the *β. neglecta* of Babington's Manual, p. 53.

1. *Stellaria neglecta*, Weihe.—*S. latifolia*, DC. Stems of moderate height, weak, fragile, *upright*, unbranched, or with only short branches at their base, dichomotous at the summit, with an alternating line of hairs running from knot to knot. Leaves wide, the lower ones stalked, sub-cordiform pointed; the upper sessile, ovate, pointed. Peduncles very long, reflected when in fruit, usually like the calyx with no hairs. Petals white, bipartite, slightly exceeding the calyx. Stamens ten. Anthers rose at first, then yellowish, at last brown. Styles nearly as long as the stamens. Seeds rough ["acutely tubercled"]. In damp places.

S. umbrosa, Opitz, the *S. media*, γ , of Babington's Manual, and *S. grandiflora*, Ten., is described as having its "leaves narrowed gradually into long points, its calyx more narrowed below; sepals lanceolate, acute, glabrous but tubercular; valves of the capsule narrower, seeds with prominent acute tubercles" (Bab. Man., p. 53). In the latter character the plant agrees with *S. neglecta*, of which it is perhaps a variety.

S. neglecta in aspect resembles *S. nemorum*, and it is very probably the former which has been found near Brighton (see p. 157 of this volume). *S. neglecta* is said to flower in April and May, not the year round, like *S. media*. It is to be noticed that Reichenbach (Flor. Exc.) describes *S. neglecta* as having decumbent stems.

2. *S. media*, Vill. Stems very much branched, spreading, ascending, of a handsome green colour, with an alternating line of hairs. Leaves ovate, pointed, shortly stalked, the upper ones sessile. Peduncles axillary and terminal, reflexed when in fruit, ultimately straight, usually hairy, as is the calyx. Petals white, cleft, scarcely as long as the calyx. Stamens 3 to 5 ("sometimes 6-8 in the English plant"). Anthers reddish, becoming brown. Styles nearly as long as the stamens. Capsule oblong. Seeds rough ["bluntly tubercled"].

A remarkable form occurs on a damp heath near Angers. Its stems are numerous, prostrate, branched above only; the branches upright, fastigate; petals half the length of the calyx; styles 3, plumose; stamens 3.

Obs.—The normal number of stamens in *S. media* is five; these are placed alternately with the petals, and each springs from a little round basal knob or gland. Often one or more extra stamens are found opposite to the petals, but these do not appear to be provided with any basal gland. Sometimes two stamens spring from the same gland, then the number is very variable. Of some flowers I recently gathered No. 1 offered 5 normal stamens + 1 baseless extra stamen; No. 2, 4 regular stamens + 1 irregular; another had 3 regular + 2 irregular; a fourth, 5 regular + 3 irregular stamens.

3. *Stellaria Borœana*, Jord.—*S. apetala*, Auct. *Herb* pale green, slender, turning yellow when exposed to the sun. *Stems* slender, with the alternate line of hairs. *Leaves* small, ovate, pointed, the upper ones nearly sessile. *Pedicels* axillary and terminal, those of the fruit soon becoming straight. *Sepals* close pressed, seldom opening, covered with jointed spreading hairs, rarely glabrous. *Petals* none. *Stamens* 2 or 3. *Anthers* violet, turning brown, included. *Styles* hardly any. *Stigmas* short, curved. *Capsule* ovoid, exserted. *Seeds* small, pale, minutely rough, shagreened in the middle ["bluntly tubercled"]. Dry sandy places.

Capsule and calyx often tinged with purple in the Isle of Wight plant. Sepals spreading under a hot sun only.

(Derived principally from Boreau, 'Flore du Centre de la France,' vol. ii. p. 104.)

Errata in former pages.—The French word "ovale" was mistranslated as *oval*, its equivalent in English being *ovate*: this correction is necessary in the descriptions of *Draba*. P. 105, line 16, for *joint* read *point*. P. 127, the reference for the dichotomous arrangement of *Viola* should have been to Boreau, vol. i. p. 154. P. 132, line 22, for *dotted* read *clothed*. P. 141, line 34, instead of 8 read 7; line 36, for 6 read 5; and on the next page, line 1, for 7 read 6.

PLATANUS ACERIFOLIA,

Commonly called the Occidental Plane.

(From the Gardeners' Chronicle, January 21, 1860.)

1. *P. acerifolia palmata*; much palmated, with leaves more pubescent than those of *P. orientalis*; growth more erect.

2. *P. acerifolia palmata superba*; with much larger leaves than No. 2, very deeply palmated growth, more spreading, very vigorous.

3. *P. acerifolia pyramidata*; leaves nearly entire; habit erect, compact, and very hardy and vigorous; likely to form a noble tree.

4. *P. acerifolia grandifolia*; leaves slightly lobed like the type, but of much larger growth; erect and vigorous.

It does not seem probable that the Maple-leaved Plane can be a hybrid between the Oriental and Occidental Planes, because the latter has never made any progress in this country towards a seed-bearing state. Loudon gives Willdenow as his authority for its name of *acerifolia*; and an eminent botanist has suggested that it may be a species or variety peculiar to the south of Europe, perhaps Spain, as the name of *P. hispanica* given to a variety almost identical with it would seem to justify. I have recently received from France a Plane under the name of *Platanus macrophylla*. This appears to me to be the variety of *P. acerifolia* called by Miller and Loudon *P. hispanica*, as its leaves are slightly larger than those of *P. acerifolia*, and perhaps more deeply lobed, but to a very trifling extent; in short, it agrees with Miller's description of the Spanish Plane-tree.—T. RIVERS.

‘GENERA PLANTARUM.’

(From the ‘Gardeners’ Chronicle,’ March 3, 1860.)

We are able to announce the early appearance of a new ‘Genera Plantarum,’ the joint production of Dr. Hooker and Mr. Bentham, than whom no more able botanists exist at the present day. It will be written in Latin, so as to be readable in all countries, and will contain the essential characters of every

known genus of plants, together with their synonyms. The arrangement will be that of the Natural System. Under each natural order there will be, firstly, an analysis of the genera it contains, and afterwards succinct descriptions of them. No work in natural history is more needed: we may add, indeed, that it has become a matter of first necessity, for what with spurious genera formed upon insufficient information, or from erroneous observation, or from mere ignorance, or from an eagerness to seize upon differences which are not distinctions, systematic botany is becoming a chaos. *Ruit mole sua*. The last number of the Proceedings of the Linnean Society affords two striking examples of the way in which botany is encumbered with technical rubbish. Mr. Benjamin, a German botanist, publishes under the new name of *Akentra* a plant which he distinguishes from *Utricularia* by the supposed absence of a spur to the corolla. But Mr. Oliver has shown that the species has a remarkably large spur! and so *Akentra* goes to the dogs. Prof. Bertoloni receives from south-eastern Africa specimens of a tree producing vegetable butter, and not knowing what it was, but fancying it must be the Butter-tree, which Mungo Park called *Shea*, he names it *Sheadendron*, and gravely intimates that it must be the type of a new natural order of plants, which the worthy Professor designated *Sheæ*! Caruel, however, a young Florentine botanist, has shown that *Sheadendron* is only a *Combretum*, and consequently a member of one of the best-known natural orders; and also that it has no more relation to Mungo Park's *Shea* than an ape to a rhinoceros. Such is the stuff which Hooker and Bentham have undertaken to clear away. Useful as was the volume of Endlicher on the same subject, it was a mere compilation from books, instead of being the result of personal observation, and, from the complexity of its descriptions, could hardly be used except by experienced naturalists. The work now commenced will be exactly the reverse; that is to say, it will be entirely the result of the personal examination of enormous authentic materials, and from the simplicity of its plan will be intelligible to everybody who is master of botanical rudiments. We venture to predict that, if no unforeseen accident shall prevent its completion, its appearance will be the commencement of a new era in systematical botany.

CHAPTERS ON FUNGI.

By ARCHIBALD JERDON.

CHAPTER V.

Having finished my illustrations of the large and important Order HYMENOMYCETES, I now come to the second great Order, namely, GASTEROMYCETES, which is characterized by having the hymenium enclosed in a *peridium*, which generally bursts in various modes, at maturity, and discloses the spores, which are usually very numerous. The common Puff-ball may be taken as a general type of the group, but there is great variety both in form and substance.

Suborder 1. PODAXINEI.

I am not aware of any representative of this suborder having been found in Great Britain. Several species occur in Australia and other warm countries, but the group is comparatively a small one.

Suborder 2. HYPOGÆI.

The Fungi of this suborder are characterized by their subterranean habit. A few species are found in the south of England, but they are rare elsewhere. They are distinct from the real *Truffles* in internal structure, though bearing considerable resemblance to them in outward form.

I shall only give one example.

RHIZOPOGON.

Uterus sessile, bursting irregularly, marbled internally with anastomosing veins. Sporangia sessile.

RHIZOPOGON ALBUS, Bull. *White Truffle*. Round, rather rugged, whitish, then reddish-brown, slightly fibrillose at the base.

On sandy ground, in woods, rare. Spores ochraceous or reddish-brown.

Suborder 3. PHALLOIDEI.

In this suborder the hymenium, when mature, deliquesces, which is exactly the opposite of what takes place in the other suborders of the Order.

I shall take as the type of the group the genus *Phallus*.

PHALLUS.

Receptacle stipitate, pileiform ; border entire.

PHALLUS IMPUDICUS, L. *Common Stinkhorn*. Pileus free, conical, pervious, reticulated, borders of the reticulations nearly entire.

In woods, hedges, etc. etc. Summer and autumn. Not uncommon.

A very curious Fungus, abounding in some seasons, and apparently preferring a loose and dry soil.

In its first stage it appears in the form of a roundish or ovate body, resembling a hen's-egg, of a whitish colour, smooth and heavy, and half-immersed in the ground. In process of time this egg-shaped body bursts, and gives birth to a white porous stem, from four to six inches long, which bears at its summit a conico-campanulate honeycombed receptacle (or pileus), the cells of which are filled with a dark-green, slimy, stinking substance, in which the innumerable very minute spores are dispersed.

The Fungus has a most disagreeable odour, and is often detected by this property, before it meets the eye, but, strange to tell, on a nearer approach the smell is often less perceptible. This odour proceeds from the slimy matter contained in the cells of the receptacle, and is very attractive to flies, which generally devour the whole contents in a short time, leaving the cells empty.

The plant in its various stages is beautifully figured by Greville in his 'Scottish Cryptogamic Flora,' vol. iv. t. 213 and 214.

Suborder 4. NIDULARIACEI.

A small but curious group of Fungi, characterized by the peridium containing one or more sporangia (or seed-vessels), in which the true spores are borne.

I take the genus *Nidularia* as illustrative of the suborder.

NIDULARIA.

Common peridium simple, *sporangia* at first floating in jelly, furnished with a highly elastic pedicel, lentiform, fleshy, filled with a compact mass of spores.

NIDULARIA CRUCIBULUM, Pers. *Cylindrical bird's-nest Peziza*. Campanulated-cylindrical, truncate above and below, sub-

tomentose, at first ochraceous, then ferruginous, within smooth and of a pallid yellow-brown.—*Grev. Sc. Crypt. Fl. t. 34.*

A very curious and pretty little Fungus. The peridia, which are gregarious, are from $\frac{1}{4}$ to $\frac{1}{2}$ inch high, and are at first closed by a kind of lid or membrane. When this separates, the lenticular sporangia are discovered lying in the bottom of the cup-shaped peridium, like eggs in the nest of a bird.

It grows on pieces of decaying fir-wood, straws, sticks, etc., but is not a common plant by any means. The general colour is an ochrey yellow.

Suborder 5. TRICHOGASTRES.

A generally-known group, containing the Puff-bulls and allied Fungi. The substance is at first fleshy, but at maturity becomes a dusty mass of threads and spores. The peridium, which is either simple or compound, generally bursts at the summit when the plant is ripe, and the spores are dispersed by the atmospheric influences.

I shall instance two genera, *Geaster* and *Lycoperdon*.

GEASTER.

Peridium double, outer distinct, persistent, splitting into star-like expanding rays.

GEASTER LIMBATUS, Fr. *Multifid starry Puff-ball*. Outer peridium coriaceous, multifid, expanded; inner subpyriform, pedunculate; mouth fimbriato-pilose, depressed, subacute.—*Grev. Sc. Crypt. Fl. t. 306.*

Woods and hedge-banks; not common.

At first globular and tomentose, and sunk in the ground. In its progress to maturity the outer peridium bursts and expands into several unequal segments, exposing the inner one, which is slightly stipitate, and has a conical orifice composed of striated segments, terminating in small woolly tufts. This inner peridium contains a mass of dark purplish-brown spores and filaments (*flocchi*). The whole plant when mature is of a pale reddish or dingy grey.

A beautiful Fungus, but rare. There are several other British species, but all apparently rare also. There is a good figure of the plant in Greville.

LYCOPERDON.

Peridium membranaceous, with an adnate, subpersistent bark, furnished within at the base with a spongy, sterile stratum. Capillitium (mass of flocci) unequal.

LYCOPERDON GEMMATUM, Batsch. *Studded Puff-ball*. Peridium membranaceous, persistent, narrowed at the base, covered with the mealy adnate bark and subspinulose warts; flocci persistent, forming in the centre a columella. Spores yellowish-green.

Fields and woods, very common.

An abundant and very variable species, no less than six varieties being described in the 'English Flora.' The colour of the plant is a pale brownish-white.

Suborder 6. MYXOGASTRÆS.

An extensive suborder, often exhibiting great beauty of form and colour. In an early stage the plants consist of a soft, pulpy substance of various forms, or even shapeless. By degrees this hardens, and a peridium or peridia are formed, which gradually become drier, and at length contain a mass of flocci or plates and spores, in so far resembling closely the *Trichogastres*. They grow mostly on rotten wood and similar substances.

To illustrate the group I shall take the genera *Lycogala* and *Æthidium*.

LYCOGALA.

Peridium determinate, composed of a double membrane, somewhat warty, persistent, bursting at the apex. Flocci very delicate.

LYCOGALA EPIDENDRUM, L. *Scarlet Lycogala*. Subglobose, blood-red, then brownish-grey, punctated-scabrous; mouth irregular; spores becoming pale.—*Grev. Sc. Crypt. Fl. t. 38*.

On rotten stumps, pales, etc. Spring to autumn; common.

A beautiful Fungus in its young state, when it is of a fine pale scarlet colour, with the pulpy interior of a slightly darker shade. As it advances to maturity, the peridium, which is very thin and brittle, changes to a purplish-grey, and the contained mass of spores and flocci is of a purplish hue. The plant, which is about the size of a pea, is gregarious, and sometimes becomes

confluent by the union of two or more peridia. It is excellently figured by Greville.

ÆTHALIUM.

Peridium indeterminate, falling away, covered with the floccose bark, within divided by flocci into cells.

ÆTHALIUM SEPTICUM, L. *Common Æthalium*. Effused or roundish, yellow, cinnamon, or pallid. Spores at length black. —*Grev. Sc. Crypt. Fl. t. 272*.

On tan in hothouses, on twigs and mosses in woods, etc.; common.

Very variable, often spreading in irregular masses to nearly a foot in breadth, and an inch or more in thickness. The general colour of the exterior is a bright yellow, though there is a variety of a violet colour. When mature the whole plant is a crumbling mass of dark-brown spores.

A curious plant, well known as a pest in hothouses and tan-pits, where it is often injurious from the rapidity of its growth.

Mossburnford, May 5, 1860.

FLEMING SOCIETY OF NATURAL SCIENCE.

In our last report of this Society the following omissions occurred:—After the report of Mr. Carruthers' paper on "Palæontological Botany" (Feb. 21st), in reference to the two papers on Geology following it, insert—"2. On the economic value of the Old Red Sandstone of Caithness. 3. Notes on the shell-banks of Huna, on the shores of the Pentland Frith, illustrative of the formation of lime in the ancient seas; by Mr. Robert Brown. Both papers were the result of observations made during a visit in the past autumn, and were illustrated by specimens and sketches taken on the spot." It was Mr. C. W. Peach, of Wick, who found *Corynactes viridis* near the coast of Stroma, Caithness, and communicated it in a private note to Mr. Brown, who noticed it to the Society.

Reviews.

Natural History Review. October, 1859. London: Williams and Norgate.

The first work noticed in the 'Natural History Review,' is the 'Diary of a Journey from the Mississippi to the coasts of the Pacific with a United States' Government Expedition; by Baldwin Mollhausen.' In the course of this journey the traveller met with a "remarkable formation of silicified stems of trees *in situ*, or partly thrown down." "As we proceeded further we really thought we saw before us masses of wood that had been floated hither, or even a tract of woodland where the timber had been felled for the purposes of cultivation. Trees of all sizes lay irregularly scattered about, and amongst them stumps with the roots that had been left standing; some of them were more than sixty feet long, and of corresponding girth, and looking as if they had been cut into irregular blocks, whilst broken branches and chips lay heaped up near.

"On a closer examination we found they were fossil trees that had been gradually washed there by the torrents, and had broken off by their own weight, and that, singularly enough, in logs of from one to three feet in length. We measured some of the largest trunks, and found one of five feet in diameter. Many of them were hollow; many looked as if half-burnt, and they were mostly of a dark colour, but not so much as to prevent the bark, the burnt places, the rings, and the cracks in the wood from being clearly discernible.

"In some of the blocks appeared the most beautiful blending of agate and jasper colours; and in others, which had yielded to the influence of the weather, and fallen to pieces, there were bits so brilliantly tinted that, if polished and set, they would have made elegant ornaments; others, again, had not yet lost the original colour of their wood, and looked so like decaying beams of deal, that one felt tempted to convince one's self, by the touch, of their petrification. If you pushed these, they fell into pieces that had the appearance of rotten planks. We collected small specimens of all these various kinds of fossil trees, and regretted that as our means of transport were so small, we had to content ourselves with fragments, which cer-

tainly showed the variety of the petrification, but not the dimensions of the blocks."

The next work which has any bearing on the subjects to which our space is devoted, is 'Three Visits to Madagascar; by the Rev. Wm. Ellis.' This indefatigable missionary and traveller discovered and brought home many rare and exquisite plants, among which we notice the following rare and beautiful Orchids, *Angræcum superbum* and *A. sesquipedale*; also the curiously-leaved plant so well known by woodcuts in elementary works on botany, *Ouvirandra fenestralis*, the lace-leaf plant of Madagascar. The leaves of well-developed plants examined by Mr. Ellis in Madagascar, did not exceed ten inches in length; a size at least equalled by plants grown in this country. Great numbers of *Urania speciosa*, Traveller's-tree, were seen. "On the way to the capital, much lovely scenery presented itself, and many fine orchids (*Dendrobia* and *Angræca*) were, with other plants, collected. Gigantic Acacias grew by the waterside, while in the lakes floated hundreds of the blossoms of the beautiful *Nymphæa cœrulea*. "But," the reviewer very considerably says, "we send our readers to the work itself, if they wish to read of the great magnitude of the trees and the great beauty of the flowers."

Note.—The reviewer writes *Dendrobii* and *Angræci*, we suppose, in the genitive case, the term species being understood. A liberty has been taken in writing these two generic names in the plural as above.

On page 514, etc., there are descriptions of some new genera and species discovered in the colony of the Cape of Good Hope, viz. *Mackaya bella*, of the Natural Order *Acanthaceæ*, *Ceropegia Bowkeri*, both described and named by Dr. Harvey. There are illustrations of these plants in the Review.

Several contributions to Irish Lichenology follow, embracing descriptions of *Lecidea*, and forty-six species are enumerated, described, and illustrated. In a continuation, the genera *Graphis*, Ach., *Opegrapha*, Ach., *Stigmatidium*, Mey., *Arthonia*, Ach., and *Chiodecton*, Fée, are similarly described and illustrated.

The Useful Plants of India, with Botanical Descriptions, Vernacular Synonyms, and Notices of their Economical Value in Commerce, Medicine, and the Arts. By MAJOR HEBER DRURY, Madras. Published at Madras, and sold by William Pamplin, 45, Frith Street, London.

The author of this work informs his readers, in a brief and modest introduction, that there was a want of "a collection of ascertained facts regarding the uses of Indian plants;" and that the desire to supply this deficiency on the resources of India "led to the compilation of the following pages," the above-named work. He adds that "a vast quantity of matter" in reference to the economical uses of plants "is scattered throughout the pages of Rheede, Ainslie, Roxburgh, Wallich, Wight, Royle, and others, who have written on the subject of Indian botany;" and these may be the chief sources from which the author compiled his volume.

The gallant compiler also refers to the Reports on the timber, vegetable oils, drugs, etc., which were submitted to the Indian public in the Madras Exhibition in 1855, in which was exhibited for the first time many of the productions of India, and especially of the British portion of our eastern empire.

The work does not profess to embrace *all* the useful plants of India. The author, indeed, introduces some of the productions of the Himalayan Flora, but the Presidency of Madras appears to be that part of India whose productions are mainly described in this volume.

The useful plants are arranged alphabetically by their generic names. The Natural Order follows the name of the species, together with the Linnæan class and order. Next there is an ample description of the species, by which any botanist may identify the plant. Lastly, there is a full account of the uses of the plants themselves.

Our readers are presented with a few extracts from the work.

"*Acorus Calamus*," it appears, is both an Indian and a British species, of which, according to Willdenow, there are two varieties, viz. *A. vulgaris* and *A. vernus*.

Our author quotes from *Pereira, Thomson, Ainslie*, etc., to the effect that the rhizomes contain a bitter principle, and are useful additions to tonic and purgative medicines, being often adminis-

tered to children in dyspeptic cases, especially when attended with laxity of bowels. The leaves are reported as useful for tanning and for perfuming various substances, such as dentrifices, hair-powder, etc. Pereira remarks that the rhizomes might be substituted for more expensive spices or aromatics. The flavour is improved by drying. In Constantinople they are made into a confection. As a tonic in intermittent fevers, etc., the rhizome has been successful where bark has failed.

Rheede states "that on the Malabar coast a bath made of the infusion of the root is considered an efficacious remedy for epilepsy in children."

Several members of a presumed British genus, *Amaranthus*, are employed in India as esculents; and among them *Amaranthus frumentaceus* appears to be very useful.

"This plant is extensively cultivated in the Coimbatore district, chiefly for the flour of its seeds, which are an article of diet among the natives. Besides the above, there are several other species of *Amaranth* used as vegetables by the natives; such as the *A. polygonoides* (Roxb.), considered very wholesome, especially for convalescents; the *A. oleraceus* (Linn.), of which the several varieties are cultivated for diet, especially the var. *giganteus*, which is about four to eight feet high, and with a thick succulent stem, which is eaten as a substitute for *Asparagus*. *A. lancro-latus* (Roxb.) and *A. viridis* (Linn.) whose leaves are used as emollient poultices, are fully described, with several others.—*Roxburgh, Ainslie, etc.*"

Cynodon dactylon, Pers., is another rare naturalized British species, found only on the extreme south-west coasts of England. This grass abounds on the shores of the Mediterranean, as about Alexandria, where it is as common as *Poa annua* is about the waste ground of our cities and villages. It is nearly ubiquitous in warm or semi-tropical localities. Our author states that it is one of the commonest of Indian grasses, growing everywhere in great abundance. It forms the greater part of the food of cattle in that country. Respecting this grass Sir Wm. Jones observes (As. Res. iv. 242) that it is the sweetest and most nutritious pasture for cattle. Its usefulness, added to its beauty, induced the Hindoos to celebrate it in their writings. The natives, too, eat the young leaves, and make a cooling drink from the roots. *Roxb.*

It will be evident, from the few extracts taken from this valuable work, that it should be the *vade mecum* of three classes of

persons. First, of those who go to India with the view of surveying the country and fixing on a locality for locating themselves with the intention of devoting their energies either to the culture of the soil or to commerce. Second, it should be well studied by all the *employés* of Government in India, whether they are to be engaged in a civil or a military capacity. Thirdly, all *savans* who travel in India merely for the promotion of science will find this book one of the most useful guides to the knowledge of the productions of this the most important dependency of the British Crown.

In addition to the scientific name and description, accompanied in all cases with a reference to all the botanical authorities on the subject, there is an ample list of Indian or native names, not merely placed after each article in the body of the work, but in an alphabetical list at the end of the volume. A more complete work, as far as it goes, on the useful botanical produce of India, could hardly be devised. We hope its circulation will be equal to its merits. We intend to avail ourselves of its contents at a future period, when our pages are not required for articles connected with the botany of regions not so remote as British India.

J. A.

Variability of Form, etc., in Vegetation. On the Natural and Non-Natural Variability of Plants, or on the Relations between their Normal and Abnormal Formations. By MAXWELL T. MASTERS, Lecturer on Botany, St. George's Hospital, etc.

In this paper, read before the Members of the Royal Institution, the author assumes that there are *species*, or ideal types, or representatives of groups of organized living existences, and also that the species or types are endowed with a very variable, but limited power of variation. He admits that it is not always easy to distinguish between the class of natural and unnatural variabilities. When there is a change in condition, the variation is natural. Notice is taken of the varieties of Primrose, Cowslip, Oxlip, etc., but it is not stated whether these changes belong to the natural or the unnatural category. It is stated that in the Hookerian herbarium there is a specimen in which a Cowslip and a Primrose spring from the same stem.

It appears that Professor Buckman has ennobled the wild oat. Qx. Has he, by cultivation, succeeded in changing *Avena fatua* into the Potato-oat, early Angus, or some valuable variety?

It is inferred from probabilities, that there are limits to variation (see p. 4), and that change appears less common in the more complex forms of vegetable beings,—for example, in *Compositæ* and *Umbelliferae*, etc.,—than in those plants wherein “the structure does not depart so widely from the leaf-type:” we suppose the author means, in the monocotyledonous forms. The Essay concludes with a remark which we all know by experience as well as testimony to be too true, viz. that there is a tendency to degeneracy prevalent in all valuable varieties of vegetation. We could believe this though unsupported by the high authority of the famous Latin epic poet: it is however valuable as a record of the experience of an acute observer who lived twenty centuries ago. This tendency unhappily is manifested not only in the physical but also in the moral world. “*Video meliora proboque; deteriora sequor.*”

Zusätze und Berichtigungen zu meiner Flora der Pfalz; von Dr. SCHULTZ. (Additions and Emendations to the Flora of the Palatinate.)

The following account of the times of blooming of the under-mentioned British *Thalictra* may be of some assistance in determining the species of this difficult genus.

Thalictrum præcox, mihi (*i. e.* Dr. Schultz), *T. majus*, Gr. and God., but neither of Koch nor Jacq., is the first in flower. It blossoms about the end of May. Grenier and Godron adopt *T. majus*, Jacq., as their species. See Gr. and God., p. 7. When will botanists leave off heaping names upon names? *T. præcox*, Schultz, a new synonym! Let it pass, because it flowers in the end of May!

T. sylvaticum, Koch. Is this a variety of *T. majus*, Jacq., or is it any form of what many British botanists call *T. flexuosum*? Whatever it be, our author tells us that it flowers eight days later than the former.

T. minus, L. (*T. montanum*, Wallr.), flowers about the 14th of June.

T. saxatile (*T. flexuosum*, Rchb.), flowers about 20th of June.

T. serotinum, mihi. Another new appellation, or *T. majus*, Koch, and *T. flexuosum* of authors; approaching *T. saxatile*, but twice the size; flowers last, viz. on the 15th of July. All of these would probably be in flower a week or ten days later in Britain than in Bavaria.

Ranunculus auricomus, it appears from this brochure, on the authority of P. Müller, forms two sub-species. The one blooms some time before the other, and has the petals perfect.

Isatis tinctoria, the author states, is found in a place where the wood was grubbed up ("in einem abgetriebenen Wald"), with *Verbascum Lychnitis*. This is an uncertain plant even in the south of Germany. It has been very permanent in England, both in Surrey and Worcestershire, probably for centuries. See 'Phytologist,' vol. iii. p. 299, etc.

Our author finds *Spergula pentandra*, L., in abundance. British botanists would gratefully receive a supply of this, to them, doubtful plant.

Do British botanists recognize two well-defined kinds of *Stellaria media*? There are varieties of this species, and Dr. S. asserts, p. 4, that one of them is well distinguished from *S. media*. (See *antea*.)

Erodium cicutarium, on the same authority, includes two species, which grow in the Palatinate. The one is *E. cicutarium*, L'Hér., and the other, *E. pimpinellæfolium*, Sibth.; probably both are common in England. Has Mr. Babington abandoned the latter variety? or is he convinced that it has not yet been detected in Great Britain?

Centaurea Jacea, Dr. Schultz writes, comprehends several species, of which he intends to publish some details when he has made up his mind ("ich später zu berichten gedenke").

Euphrasia Odontites, in the Palatinate, comprehends two species. The one, *E. Odontites*, flowers in June; the other, *E. serotina*, Koch, flowers in September. The latter name is changed into *E. Kochii*, in honour of the distinguished botanist; a change which some may think uncalled for.

The additions to the cryptogamous part of the Flora are omitted for want of space.

Gardeners' Chronicle.

There are in the series of this weekly periodical several papers on Mr. Darwin's 'Origin of Species;' and on Mycology, by the most eminent mycologist of the day. There is only room at this time for the following notice of *Quercus sessiliflora*, by Mr. Rivers:—

"I was not aware, till recently, of the vast numbers of this variety of Oak growing in the Forest of Dean. I happened to be visiting a friend living in Monmouth, last October, and in taking a drive to view the scenery of the Forest, we went through a considerable portion of it, where the Oaks grow, in our way to Coleford. I was at once struck with the hills and valleys, as far as the eye could reach, being covered with round-headed Oak-trees, none of them very large, but all standing at regular distances, as if they had been thinned out to grow into timber, which has been the case. Their compact round heads and dark foliage at once reminded me of the sessile stalked Oaks in the Forest of Fontainebleau, and I immediately commenced a search for acorns. I found most of the trees had some few left on them, and all that I examined were the short-stalked variety, or *Q. sessiliflora*. My friend, an inhabitant of Monmouth, said that the portion of the forest devoted to oak-culture for the Navy, and which looked rather like a plantation of Oaks than a forest, extended over 11,000 acres."

 BOTANICAL NOTES, NOTICES, AND QUERIES.

RANUNCULI (*Batrachian*). (See 'Phytologist' for May, 1860, p. 138.)

The author of the above-mentioned paper remarks:—"Nor is it believed that botanists have altogether acquiesced *even* in the estimate of 128 as the number of British species."

Does the learned author mean that botanists do not admit that there are 128 British *Batrachian Ranunculi*? The word 'even,' which I have italicized, intimates that there may be more than 128 species into which the two ancient species of *R. aquatilis* and *R. hederaceus* have been split by the keen investigations of modern scientific observers.

The writer of the article in question, and the readers also, are informed that no botanists, neither British nor Continental, acquiesce in any such extravagant estimate.

It was once asked in the 'Phytologist'—Who knows *Viola canina*? and the question startled some rather nervous folks. If the question were asked,—Who knows *Ranunculus aquatilis*? could a tithe of even British botanists reply in the affirmative. Who knows the 10, 20, 30, or perhaps 100 species, into which this humble aquatic has been divided. It has be-

come the parent of a numerous progeny. Is this any confirmation or corroboration of Mr. Darwin's theory of the origin of species founded on the selective or elective capabilities which the Water Crowfoot displays?

Perhaps, Mr. Editor, some of your learned correspondents will enlighten me, and possibly some other reader, on this point. BETA.

CYNODON DACTYLON.

Sir,—Should you deem it worthy of insertion in your valuable work, the following is at your service. In visiting the habitat of the *Cynodon Dactylon* I was rather surprised to find so many with *five spikes*, the usual form being four. They were also of a very large size. I send you an example. Should any of the readers of the 'Phytologist' wish a specimen, I shall be happy to supply them. WM. CURNOW.

Pembroke Cottage, Newlyn Cliff, Penzance.

PARNASSIA PALUSTRIS, L.

This singularly beautiful plant may be grown to advantage in a common flower-pot, by taking it up from its native habitat with a portion of the soil, and planting it in an ordinary-sized pot, and immersing the same in damp soil up to the brim. The only attention necessary is to observe that the plant have plenty of moisture. The plant in question being scarce in this neighbourhood and a favourite of mine, I so treated a living plant I collected in a small peaty bog in Scone wood the year before last (1858), and the result is that instead of two slender flower-stalks that it had produced that year, this summer (last August) it produced seven, and each stalk produced one leaf crowned with a beautiful flower, the emblem of innocence and purity. The corolla of this plant, when seen by the unassisted eye, is an object of great beauty and elegance, but far more so when examined by a lens of even very moderate power. Its nectariferous glands are alike ornamental; in short it is, to use the language of inspiration, "altogether lovely." It is truly astonishing that this lovely gem has not, by the unanimous consent of botanists, its proper place assigned it in the Vegetable Kingdom. Some are for placing it among the Hypericums, some among the Saxifrages, and others among the Droseras: perhaps none are right. It is probably a single genus, and associated with none else in the Natural Order *Parnassiaceæ*. JOHN SIM.

Bridge End, Perth.

YARROW.

(From Warton's Hist. Eng. Poetry, vol. ii. p. 261.)

The poet Dunbar, in his poem 'The Thistle and the Rose,' introduces Dame Nature commanding that the progress of the Spring should be no longer interrupted by the chill north-easters which hindered, even *then*, the buds from blowing. She sent the roe to collect the beasts, the swallow to summon the birds, and the *Yarrow* to assemble the flowers. He might easily have selected a more suitable messenger among the spring flowers; the Yarrow does not flower till towards the end of summer. The historian, Warton, praises the judgment and ingenuity of the poet in the text as above, and subjoins the following note:—"The Yarrow is *Achillea*, or

Millefolium, commonly called Sneezewort. There is no reason for selecting this plant to go on a message to the flowers, but that its name has been supposed to be derived from *arrow*, being held a remedy for healing wounds inflicted by that weapon." As there is no reference given by Warton to any authority for the name of Arrow, or the peculiar healing properties of the Yarrow, will you or some of your readers be kind enough to enlighten me on this subject? H. B.

Pliny tells us that the name *Achilleos* was given to the plant because Achilles cured the wound of Prince Telephus with it.

URTICA PILULIFERA, L. (*Roman or Pill-bearing Nettle*).

Grows at Gosport, somewhere in the way to Gomer Pond. The seeds are sold by London seedsmen under the name of Roman Nettle, I am told, for some medical (medicinal) purposes, though what that is I am unable to learn, as this plant does not form an officinal article in any of our London pharmacopœias; nor is it worth cultivating for ornament. The knowledge of this fact favours a suspicion I have always entertained, that *U. pilulifera* has in all its British stations originated from the gardens of the growers of simples.—*Bromfield's Flora Vectensis*.

BOWS OF YEW, ETC.

By Act 5 Edw. IV. ch. 4, every Englishman was obliged to have a bow in his house of *his own length*, made either of Yew, Wych Hazel, Ash, or *Auburn*. I wish to know what wood is here meant by *Auburn*. By a statute of the 8th of Elizabeth (1565) bowyers were directed to have in their houses, each fifty bows, made of Elm, Wych Hazel, or Ash.

S. B.

ON WOODS USED FOR BOWS.

A correspondent desires to know (see *supra*) what wood is meant by *Auburn*, of which bows were made in Elizabeth's reign, and probably before that period. *Cytisus Laburnum* is named in Scotland *Hobburn Saugh*, and probably the plant or tree was originally introduced from France; the name certainly was. Du Hamel (see *infra**) supposes that the name is derived from *Laburnum*, and it is not improbable that this term is derived from *arbor*, a tree. There is no doubt of its being used for bows in later times, for Matthioli says it was then the best wood for this purpose. It is mentioned by Theocritus, Virgil, and Pliny. The first states that goats ate its shoots; Virgil, that it increased their milk; and Pliny says it is common on the Alps and rare in Italy.

ANSWERS TO QUERIES.

In 'Phytologist' for January last, there were some observations on another form of *Prunella vulgaris*, by 'Stigma.' Many years ago I found

* From Loudon's 'Arboretum,' etc., vol. ii. p. 590:—"The name of *l'Aubours*, which is given to this tree in Dauphiné and Switzerland, is suppose by Du Hamel to be a corruption of the Latin *Laburnum*. The word *arbois* is a corruption of *arbois*, the wood of this tree having been used by the ancient Gauls to make their bows, and being still so employed by the country people, where these bows are found to preserve their strength and elasticity during half a century."

in Wyre Forest several plants of this white variety; one I brought and planted in my garden, where it produced an abundance of seedling plants annually, and those seedlings continued to produce, without any variation in character, for many years. Although growing in a rich soil, the plants were much less than the common *P. vulgaris*. Its flowers were invariably a pure white. I have since found it growing in profusion in a barren field at the base of the Titterstone Clee Hill.

In answer to query of 'H. B.' in the 'Phytologist' for March last, on the habits of two forms of *Gymnadenia conopsea*;—one form is found in abundance, growing in plashy bogs in Wyre Forest, and nowhere besides in that extensive forest. The other form is found in dry pastures with *Orchis Morio*, and is always a much less plant, and not so fragrant. Surely there must be a material difference in the organic structure of those two plants to cause habits so different,—the one decidedly a bog, the other a pascual plant. The permanent habits of plants entitle them to a specific distinction; external characters are frequently not so conclusive. No doubt these two plants are physiologically distinct.

This new oak-gall, produced by *Cynips indicus petioli*, which has caused so much needless alarm, has for some time past made its appearance on the Oak on the borders of Wyre Forest.

G. J.

URTICA PILULIFERA. (See 'Phytologist' for April, 1860.)

I have seen Roman Nettle in several localities which were not contiguous to the garden of the growers of simples, viz. in the valley of the Thames, several places; Haverstock Hill, near Hampstead, etc.

A. I.

Mr. Editor,—Can you inform us why authors write *triphyllus*, with a Greek termination, and *rhiphyllus*, *heterophyllus*, with a Latin termination?

[Authority and precedent can be quoted for both the terminal forms, *-us* and *-os*. But as the feminine and neuter terminations *-a* and *-um* are employed exclusively, it would be more conducive to uniformity to drop the Greek form, *-os*, as we have abandoned *-η* and *-ov* (*-e* and *-on*) in the feminine and neuter, and employ *-us* instead of *-os*.]

In 'Phytologist,' p. 126, vol. iv., *Rosa ciphiana* occurs. Will any reader inform the querist if this be a synonym of Sweet's *R. Ciphieri*. See Sweet's Herb. Brit.

ALTIQUIS.

Communications have been received from

J. G. Baker; William Pamplin; Rev. R. H. Webb; Rev. H. A. Stowell; Robert Brown; A. G. More; John Sim; A. I.; J. A.; Beta; Wm. Curnow; H. B.; Sidney Beisly; Aliquis; Geo. Jordan.

BOOKS RECEIVED FOR REVIEW.

The Friend, etc.

ERRATA.

Page 91, line 10 from bottom, for *Mercurialis annuus* read *M. annua*; and page 92, line 8, for *Marianus* read *Marianum*. Our contributor is indebted to the Dublin periodical, noticed, for this blunder.

BRITISH LEPIGONA.

Descriptions of some Species of Lepigonum; translated from the 'Symbolæ ad Synopsin Generis Lepigonorum' of N. C. KINDBERG, 1856.

The genus *Lepigonum* represents that section of the Linnæan *Arenaria* which was formed to include the species furnished with stipules. Several other names have been proposed for the genus, such as *Spergularia*, Pers., (employed in the London catalogue,) *Stipularia*, Haw.; but the term *Lepigonum*, Wahlb., has been adopted by Fries, and has become familiar to the English botanists in Babington's Manual.

The position of the genus is still a matter of dispute. *Lepigonum* has been lately removed, together with *Spergula*, from the *Caryophyllaceæ*, and placed, chiefly on account of its stipules, in the order *Paronychiaceæ*; but many eminent botanists continue to think that its affinities are rather with the former than the latter order.

The British *Lepigona* are probably most generally known under the names of *Arenaria rubra* and *A. marina*, with the addition of *A. media*, and recently of "*Spergularia rupestris* or *rupicola*." *Lepigonum salinum*, though mentioned in Babington's Manual as a variety of *L. marinum*, is apparently known to very few of our botanists; and it is with the view of directing renewed attention to a strict discrimination of this and of some other plants of the genus, that the present extract is offered to those who may wish to investigate the British *Lepigona* during the ensuing summer. It is to be remembered that hitherto only five of the species here described have been ascertained to occur in Britain. Kindberg indeed mentions his *L. neglectum* as found in Sussex, but there is great reason to believe that this is only another synonym for the plant which commonly passes under the name of *L. medium* among English botanists.

Subdiv. I. *Seeds rough, seldom winged.*

Sect. A. *Annuals, like L. rubrum.*

Lepigonum rubrum (Linn.). *Stems* roundish, often compressed in their upper portion, furnished with thickened joints. *Leaves* flattened, somewhat fleshy, often curved, sublinear filiform, somewhat wider towards their tip, bluntish or awl-shaped, glaucous.

Stipules triangular-ovate, approaching to lanceolate, and tapering into a long point, often torn or cleft, of a silvery whiteness. *Peduncles* supported by leaves, before flowering about equalling the calyx, but after fruiting sometimes three times as long. *Sepals* sublanceolate, bluntish, with a membranous border. *Petals* obovate, obtuse, about as long as the calyx, red or lilac. *Capsule* small, equalling or slightly exceeding the calyx, ovate and somewhat pointed. *Seeds* triquetrous-obovate, not winged, furnished with a raised border.

In sandy places, at all elevations, throughout Europe.

2. *Lepigonum neglectum* (Kindberg). Closely allied to *L. rubrum*, but with its *stipules* shorter, broadly ovate, entire, little shining. *Panicle* almost devoid of leaves. *Peduncles* usually shorter than in *L. rubrum*. *Capsule* larger, exserted, and half as long again as the calyx. *Seeds* more rounded, sometimes winged, furnished with a raised border.

In grassy places near the sea, in the vicinity of saltworks. Cherbourg and Calvados, France. Selsea, in Sussex, etc.

3. *Lepigonum diandrum* (Gussone). *Stems* roundish, jointed, the internodes swollen at the base. *Leaves* fleshy or semi-round, scarcely at all curved, linear-filiform, bluntish, green. *Stipules* very short, broadly triangular, with a short point, usually entire, dirty-white. *Peduncles* supported by leaves, always exceeding the calyx, ultimately often four times as long in the seeded plant, very slight. *Sepals* linear-lanceolate, bluntish, narrowly bordered, with membrane at their edges and at their inflected summit. *Petals* ovate, obtuse, usually shorter than the calyx, of a red or rose colour. *Capsule* small, somewhat shorter than the calyx, either somewhat pointed or subglobose. *Seeds* pyriform, wingless, furnished with a slightly raised border.

Distinguished from *L. rubrum* by its slight peduncles, its much-branched stems, and the smaller size of its stipules and flowers. The name is ill chosen, as it is not unusual to find ten stamens.

In clayey salt marshes near the sea: in Sicily, Algeria, and in the Pyrenean peninsula.

Sect. B. *Perennials*, like *L. rupestre*.

4. *Lepigonum rupestre*, Labil. *Stems* round, jointed, their joints thickened. *Leaves* somewhat fleshy, sometimes curved,

sublinear filiform, rather pointed or awl-shaped. *Stipules* broadly ovate, abruptly pointed, usually entire, rather shining. *Panicle* without leaves. *Peduncles* usually long, 3-4 times the length of the calyx. *Sepals* oblong or ovate-oblong, somewhat pointed, with a slightly membranous border. *Petals* broadly ovate, obtuse, shorter than the calyx, rose or whitish. *Capsule* large, when ripe exceeding the calyx, ovate, bluntish. *Seeds* small, triquetrous-obovate, wingless, furnished with a raised border.

Remarkable for its leafless panicle, for its short and usually fasciated leaves and crowded stems.

"In sandy places" [but in Britain upon rocks and cliffs near the sea].

5. *Lepigonum azoricum*, Kindberg. *Stems* thick, compressed, with their joints thickened. *Leaves* flat, not curved, lanceolate, wider towards the tip, bluntish, the lowest somewhat fleshy. *Stipules* very short, broadly ovate or reniform, bluntish, sometimes cleft, of a dirty-white colour. *Panicle* without leaves. *Peduncles* short, of the same length as the capsule, or when ripe nearly twice as long. *Sepals* ovate, obtuse, slightly bordered with membrane, usually furnished on the back with a short nerve. *Petals* ovate, obtuse, shorter than the calyx, whitish. *Capsule* of middling size, smaller than in *L. rupestre*, broadly ovate, or subglobose, bluntish. *Seeds* obovate, subcompressed, wingless.

A very distinct species. Its leaves and stems are stouter than in its allies: the leaves always fasciated.

From St. Michael. [This plant may well be expected to occur on the west coast of Ireland, or in the south-west of England. Care should be taken not to pass it as a stout form of *L. rupestre*.]

6. *Lepigonum radicans*, Guss. Nearest to *L. rubrum*, from which however it differs in the following particulars. Its stems are tufted and rooting at the joints, with their internodes shortened. *Leaves* bright green, longer than the internodes. *Stipules* usually entire. *Panicle* with hardly any leaves. *Peduncles* shorter than in *L. rubrum*. *Sepals* linear-lanceolate, rather pointed, hardly at all bordered with membrane. *Petals* oblong. *Capsule* subrotund-ovate.

In damp grassy places in the mountains and in sandy places. Occurs in Sicily, and also in the island of Gothland in Sweden.

Subdiv. II. *Seeds smooth, usually winged.*

Sect. A. *Annuals, like L. salinum.*

7. *Lepigonum salinum*, Presl. *Stems* compressed, thickened at the joints. *Leaves* somewhat fleshy, often curved, linear-filiform, a little widened upwards from a narrow base, bluntish, or awl-shaped, green in colour. *Stipules* broadly ovate, triangular, usually entire, dirty-white. *Peduncles* supported by leaves, short, hardly twice as long as the fruited capsule. *Sepals* oblong, bluntish, slightly bordered with membrane. *Petals* oblong, bluntish, shorter than the calyx, whitish, sometimes rose at the top. *Capsule* of middle size, half as long again as the calyx, ovate, bluntish. *Seeds* subrotund compressed, often winged, furnished with a raised border. Panicle usually lengthened into leafy racemes.

In the neighbourhood of the sea, throughout Europe.

Sect. B. *Perennials, like L. marinum.*

8. *Lepigonum marinum*, Wahlberg. *Stems* compressed, thickened at the joints. *Leaves* semi-round, sometimes curved, sub-linear-filiform, bluntish or awl-shaped, green in colour. *Stipules* short, broadly ovate, abruptly pointed, usually entire, little shining. *Panicle* without leaves. *Peduncles* twice as long as the capsule. *Sepals* oblong-ovate, rather pointed, slightly membranous at their edges, furnished on the back with a short slender nerve. *Petals* broadly ovate, obtuse, about equalling the calyx, whitish, rose at the top. *Capsule* very large, about twice as long as the calyx, ovate or broadly ovate, obtuse. *Seeds* compressed or flat, subrotund, winged, furnished with a slightly raised border.

In salt places, especially near the sea, throughout Europe; also in Northern Africa, America, and Tasmania.

Obs.—A plant found in Gothland, on the shores of the Baltic, has been distinguished, on account of its close panicle, oblong sepals, and wingless seeds, as a species under the name of *L. fasciculare*, but is probably nothing more than a less luxuriant form of *L. marinum*. *L. macrorrhizum* is a Mediterranean species, characterized by its imbricated leaves, by its stipules being half as long as the leaves, its capsule shorter than the calyx, and by its wingless, compressed, roundish seeds.

9. *Lepigonum medium*, Linn. and Fries. *Stems* round, thickened at the joints. *Leaves* somewhat fleshy, semi-round, linear, rather pointed, of a green colour. *Stipules* broadly triangular-ovate, usually entire, dirty-white. *Peduncles supported by leaves*, usually of the same length as the capsule, or sometimes twice as long. *Sepals* oblong, or oblong-lanceolate, bluntish, little membranous at their edges. *Petals* oblong, obtuse, shorter than the calyx, whitish or rose, especially at the top, or lilac. *Capsule* small, exceeding the calyx, ovate, rather pointed. *Seeds triquetrous*, rounded, obovate, wingless, or rarely winged, furnished with a slightly raised border.

Herbs, very smooth; root said to be biennial.

Occurs in damp, well-watered places, on the banks of rivers and of field-ditches, in streets, etc.; also by the sea-shore. In Europe, North America, Africa.

The dichotomy of the species is as follows:—

- | | |
|---|----------------------|
| 1. Seeds tuberculate, rough, usually wingless | 2 |
| Seeds smooth, usually winged | 7 |
| 2. Root annual | 3 |
| Root perennial | 5 |
| 3. Capsule about equalling calyx; panicle leafy | 4 |
| Capsule $1\frac{1}{2}$ times as long as calyx; panicle leafless, or nearly so | <i>L. neglectum.</i> |
| 4. Petals equalling calyx; stipules large, silvery | <i>L. rubrum.</i> |
| Petals shorter than calyx; stipules short, dull white | <i>L. diandrum.</i> |
| 5. Stems rooting; panicle nearly leafless | <i>L. radicans.</i> |
| Stems tufted, but not rooting; panicle leafy | 6 |
| 6. Stems round; leaves fleshy, pointed; pedicels 3-4 times as long as the calyx | <i>L. rupestre.</i> |
| Stem compressed; leaves flat, bluntish; pedicels not twice the calyx | <i>L. azoricum.</i> |
| 7. Root annual | <i>L. salinum.</i> |
| Root perennial | 8 |
| 8. Panicle leafless; seeds flat, all winged; capsule twice as long as calyx | <i>L. marinum.</i> |
| Panicle leafy; seeds mostly wingless; capsule slightly exceeding calyx | <i>L. medium.</i> |
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CHAPTERS ON BRITISH BOTANY.

CHAPTER V.

Theophrastus and other early botanical writers.—Remarks on plants supposed common both to England and Greece.—Theophrastus the earliest authority on nomenclature.—Names of plants common to both languages, Greek and English.—Authorities; abbreviations.—Catalogue of plants named or described by Theophrastus, supposed common to both Greece and England.

The early botanists did not attempt to define the limits of species so precisely or rigidly as the modern writers on botany very properly do, or endeavour to do. The former, in many cases, comprehended under one general name several species and even genera. They also described as species several forms which are now generally received only as varieties.

For example, they treated the varieties of economical plants, such as fruit-trees, cereals, and culinary vegetables, as genuine species; and also occasionally under one general name, as *Gramen* or *Gramina*, they entered not only distinct genera, but different or distinct orders, as *Gramineæ*, *Cyperaceæ*, *Typhaceæ*, etc.

They also describe *Anagallis phænicea* and *A. cærulea* as independent species, which are now, by general consent, described as varieties of one species, *A. arvensis*.*

The following list of plants, or names of plants, common or assumed to be common both to England and Greece, are divisible into two classes. First, such British species as are certainly the same that are recorded by Theophrastus in his History of Plants, as for example, *Pyrus Malus*, *Acorus Calamus*, and several other species. Second, such as may be those described by Theophrastus, but which are to be received as doubtful; because this famous ancient botanist did not define so precisely as his successors in modern times; and he may, as above stated, have included two or more plants under one name.

Sciences, like cities, are not devised and constructed in a day; as the proverb tells us that "Rome was not built in a day." Experience teaches us that the botany even of a single parish is

* Can any of the readers of this inform the writer which is the type or primordial form, and which is the variety? Was *Anagallis arvensis*, var. *phænicia*, first formed or created, or was *A. cærulea* the primogenial form? Or, in other words, did *A. cærulea* derive its being from *A. phænicia*, or vice versâ?

the work of years. Two or three centuries have passed since the foundations of English botany were laid by Ray, Johnson, Gerard, and Turner, and this small portion of the entire science is still incomplete. Therefore it would be unreasonable to expect that Theophrastus accomplished the work of ages and centuries within the compass of one brief life.

There are some plants in the British Flora, of which the names alone are Greek; consequently, these have no genuine representatives in the sunny climes of the fair south-east. These are botanical shadows (*nominis umbræ*), the empty sounds of reality (*voces et præterea nihil*). But these must be noticed in order to complete the literary history of the British species.

Theophrastus is the earliest extant authority for botanical nomenclature. Theophrastus, Dioscorides, and Pliny, are the famous ancient botanical triumvirate; and although we are unable, in many cases, to affirm positively that our plants are the plants of Greece, and those described by the father of botany, we have no such difficulty about the names, which in the most anciently described plants are indisputably of Grecian origin. It will also be seen how closely, in our Anglo-Saxon or English vernacular, we have followed the nomenclature of the Greeks.

This will be exemplified in the common names *Horse-mint*, *Horse-radish*, *Dog-rose*, etc., which are the verbal equivalents of what we call ancient classical names, but which were not more recondite nor far-fetched than are the terms *fly-orchis*, *lizard-orchis*, and other national appellatives derived from our own mother-tongue.

The books consulted in the drawing up of this list are the following:—

Historia Plantarum Theophrasti. 2 vols. Oxford. 1814.
Editor, J. Stackhouse, Arm.

Illustrationes Theophrasti. Oxonii. Auctor J. Stackhouse.
1811. Privately printed.

Billerbeck: *Flora Classica.* 8vo. 1824.

Clusii, Car., *Rariorum Plantarum Historia.* Antw. 1601–6.

The same author's *Historia rar. Plantarum observ. per Pannoniam, Austriam, etc.* Antw. 1583.

Columna, Fab.: Ecphrasis. Rome, 1616. *Fab. Col.: Phytobasanus.* Milan, 1744.

Parkinson, John: *Herbal.* 1640.

Turner, William: English Herball. 1554.

Tragi Commentaria, D. Kybero. Argent. 1552, etc.

Note A.—The following abbreviations are employed :—Bauh., Bauhin, C., Pinax. B. or Bil., Billerbeck, the author of the *Flora Classica*. Clus., Clusius, *Historia Plantarum*. Col., Fabius Columna, author of the *Phytobasanos* and *Ecphrasis*. Park., Parkinson, John. Sib., Sibthorp. S. or Sp., Sprengel. Stack., Stackhouse, John. Theo., Theophrastus. Trag., Tragus. T., Turner, Wm.

Note B.—The Latin generic name has the precedence, and the arrangement is alphabetical. The Greek name is generally the same as the Latin; but when there is a difference, the former is entered in a parenthesis.

Note C.—It is well known that the Latin writers make a slight modification of the original orthography to adapt it to the form customary in their own language; for example, *ov* in Greek is *um* in Latin, *os* *us*, *ai* is *æ*, *ov* is *u*, etc.

ABROTANUM (*Artemisia Abrotanum*), the Southern-wood of our gardens, is *Santolina rosmarinifolia*? according to Stackhouse, *Illustrationes*, p. 3; *Cat. Alphabet. and C. Systemat.* p. 16. On the contrary, Billerbeck, in his *Flora Classica*, makes the plant described by Theophrastus (book vi. c. 24), *Artemisia campestris*, Lin. It is therefore uncertain to what modern species or genus, or even order, the plant of Theophrastus should be referred. Many of the anciently described plants are involved in this uncertainty. See Bil. 212, 213.

ABSINTHIUM. Several writers have mentioned that this plant, *Artemisia Absinthium*, L., is not that of Theophrastus, nor of Greece. They say that *A. ponticum* is the genuine plant which now bears this name. See Bil. 213; Theo. ix. 18. Sibthorp observed *A. maritima* on the shores of the Bosphorus. Bil. 214.

ACER *Pseudo-Platanus*, L., is probably *σφενδαμνος* of the Greeks. See Lobel. Adv. 443. It is unnecessary to quote the other authorities, they all agree with Stackhouse. Billerbeck tells us that both our British Sycamores were known to Theophrastus and to the Romans.

ACORUS. *A. Calamus*, L., and *καλαμος ενοσμος*, Theoph. i. 17, may be identical. All authors agree about this species, and the plant is so remarkable that there can be no doubt about the

matter. Sibthorp, in *Flora Græca*, states that it is found in Laconia. This is found in America as well as in Europe. It is also one of the plants of Malabar, on the west of Hindostan. Rheede, in *Flora Malabarica*, mentions its use among the natives of India as a remedial agent in epileptic cases: the patient is bathed in an infusion of the root. Billerbeck, p. 94, states that it possesses tonic properties (*stärkendes Medicament*).

ADIANTUM (*A. Capillus-Veneris*) may possibly be *αδιαντον* of Theophrastus. The genuine Maiden-hair Fern is frequent in the south of Europe. In the British Isles it is found only(?) on rocks near the salt spray or at no great distance from the sea. There is a vague report of its having been recently seen on the Arenigs in North Wales; it is to be feared that there is no valid foundation for this report.

AGARICUS, *μυκη*. Sprengel says, “*forte A. campestris* or *A. deliciosus*.” The latter is reputed to be the species which Agrippina, the niece as well as the wife of Claudius, is said to have used for the nefarious purpose of poisoning her husband. This latter species, which in this country is a very acrid fungus, abounds in woods near Guildford and Albury, in Surrey. It is readily distinguished from the other species of the subgenus to which it belongs by its yellow or rather deep orange-coloured milk (sap).

ÆGILOPS and *AIRA*. The following genera and species of *Gramineæ* are very ambiguous, viz. *Ægilops ovata*, *Agrostis* (*Triticum repens*, *Agrostis alba*), *Aira* (*Lolium temulentum*), *Alopecurus* (*A. pratensis* or *A. utriculatus*). The first-named (*Æ. ovata*) is one of our rare visitants. It has recently been of some importance in the question of transformation of species; being mutable, as the followers of the author of the ‘*Vestiges of Creation*’ say, or capable of changing into *Triticum*. It certainly looks more like bearded wheat, or even barley, than *Triticum repens* looks like *T. sativum*. Billerbeck says it is a kind of wild Oat(29). It is worth notice that the Greeks at this day call Darnel (*Lolium temulentum*) by the name *ἔρα*, *ἦρα*, which differs but little from the ancient name, *αιρα*, used by Theophrastus and adopted by Linnæus.

To attempt the identification of the ancient Meadow Foxtail (*Alopecurus*) with the modern plant, viz. *A. pratensis*, would be as unproductive as milking the he-goat. Billerbeck says that

there is no reason why it may not be our *A. pratensis*, especially as this grass was seen by Sibthorp in Greece. But it may be asserted on equally good grounds, that it may be a *Phleum* or a *Phalaris*, for these grow in meadows and have a spiked panicle which does not differ much in shape from the genuine Foxtail. There is no evidence to support the opinion that it signifies any species of grass. It was probably a general term, like grass, and did not always represent the same identical species or even genus.

The remaining grasses of Theophrastus are entered here, viz. *Arundo*, *Avena*, and *Bromus*. The first-mentioned is one of the *Calami* (reeds), a very common appellative, embracing many plants of several orders; for example, *Acorus Calamus*, *Schænus*, the famous *Arundo Donax*, the ligneous reed of Southern Europe, etc. Our *A. epigeios* is supposed to be *χαπακίας επιγείου* of the Greeks; and this is not improbable, as the species are found in most parts of Europe. See Bill. 25; Sp. i. 79; Theoph. 4. 12; Stackhouse, 31, 32. Three species of *Bromus*, viz. *B. mollis*, *B. scoparius*, and *B. tectorum* grow in Greece. Some authors suppose that Rye is the *Bromus* of Theophrastus; others, that *Avena fatua*, or the Wild Oat, is the ancient *Bromus*. Sprengel assumes that it was the latter, and enters *A. fatua* as synonymous with *Bromus* of Theophrastus. It is uncertain to what genera or species of plants either the terms *Bromus* or *Avena* refer.

Some more Grasses which have Greek names will be found in the sequel, when we come to the plants of Dioscorides.

ACONITUM is another uncertain plant. The ancients knew several species of this genus. Theophrastus (b. ix. c. 16) informs his readers that it grew in Aconæ, a district or village of the Marianduni. Billerbeck says that the genuine *A. Napellus* is described by Dioscorides, though only named by the father of botany. It grows in Laconia: see Fl. Græca. It is also found on the mountains of Switzerland (Bil.). It is a rare denizen of England, probably an escape from cultivation. It is very common in cottage gardens, and many deadly accidents have been the result of mistaking its roots for those of Horseradish, and the recent leaves for parsley. Those who know the plants may marvel that such accidents could have occurred, differing as they do so much in smell, taste, and form, from the plants for which they were mistaken, but unhappily it is too true that fatal mistakes have been made.

ALLIUM. It is pretty generally supposed that two British *Allia* (*A. Schœnoprassum* and *A. Scorodoprassum*, Chives and Sand Garlic) are named or described in Theophrastus. They have in Greek several names, as *πρασον* or *γηθνον*, the Leek, *κρομμυον*, the Onion, a proof that they were in common use and much cultivated. They are popular esculents or condiments in all parts of Europe. Chives,—in German, *das Suppenlauch* (soup-leek),—is a savoury ingredient in stews, hashes, etc. Theoph. vii. 4; Spreng. i. 87; Stack. 16. 61, etc.

ALTHÆA. *A. officinalis*, our Marsh Mallow, was observed by Sibthorp in moist places in Bœotia, Thessaly, and Peloponnesus, and Theophrastus' plant is rendered by Gaza, *Hibiscus*. Mallows were in great repute anciently, both for food and physic; and in modern times the virtues of Marsh Mallow are not wholly ignored by country pharmacopolists. They are popular vulneraries even in the present day. The plant itself is very generally distributed in many parts of Europe, and it may have been alluded to by the earliest writer on plants. But it is very uncertain what species is that described or incidentally named by Theophrastus. Neither C. Bauhin nor Clusius quote the eloquent Greek botanist as an authority for their plant. See Bauhin, 315; Clusius, xxiv.; Bil. 175. See MALLOW; *infra*.

ANCHUSA. *A. tinctoria* is not doubtful. Its red root, from which the colouring extract is derived, sufficiently denotes that it is the plant meant by the early Greek botanists. It is not a British species; and indeed both *A. officinalis* and *A. sempervirens* are branded as suspected aliens. Very grave doubts are entertained about their origin. We have certainly obtained the name of the genus from Greece, and we have one, if not two, of the species, occurring here and there, and though in no great plenty, yet well established, and long known as a spontaneous production of the British Isles.

ANEMONE. *A. nemorosa* (*ανεμωνη λειμωνια*), though not described nor noticed by Theophrastus, does grow on the mountain of Parnassus in Greece. Its name and the time of its flowering are only noticed in the 'Historia Plantarum.' No author appears to have even conjectured what species is intended. See Bil. 142.

Anemone apennina, a doubtful native of Britain, grows in the Peloponnesus.

ANETHUM. *A. graveolens* is a mere straggler in Britain. (Theo. i. 18, vii. 3, 4, and ix. 7.) Several sorts are described in the 'History of Plants.' See Bil. 78, 79.

ANTHEMIS. Under this name it is supposed that Theophrastus describes or mentions *A. tinctoria* only, a reputed British species; also *Pyrethrum Parthenium*, Feverfew, another more common but also suspected alien. The genuine Chamomile, *A. nobilis*, does not reach, in the east of Europe, further south than Dalmatia. It is not unfrequent in Spain, Portugal, and Naples. See Bil. 220; Theo. i. 22, vii. 13; Stack. 9.

ANTIRRHINUM. *A. Orontium* is frequent both in the continent and islands of Greece. This is a widely distributed plant. A specimen was lately sent to the writer of this from Madeira. In Hist. Plantarum, ix. 21, it is said to be like *Aparine*, consequently it cannot be the plant now known by the above name. See Bil. 161; Theo. ix. 21; Stack. 10. Sprengel states that the plant of our author is *A. majus* (Sp. vol. i. p. 96); and further, that the text is corrupt. This is a common complaint among commentators, especially when the text is not very explicit. "*Bene tamen, fructus μωσχου ρίνας* (calf's snout) *habere.*" "This is well said, that its fruit is like a calf's snout." Stackhouse observes a prudent silence on the identity of this plant ("*forsan planta magica,*" Illust. 25).

APHACA. Theophrastus describes two kinds of *Aphaca*, one a leguminifer with a broad legumen, viii. 5, and the seeds of which readily germinate, viii. 10. The other is a composite plant, which he describes as very bitter, with a pale yellow flower, which quickly fades. The plant germinates early, *πρωτοις υετοις* (vii. 8, 10, 11). The name denotes that they were uneatable plants; and it is well known that several species of this order, especially the vetches, are very dangerous esculents.

APIUM (*σελινου*). *A. graveolens* and *A. Petroselinum* are often noted or described by Theophrastus. With these are joined *Smyrniium* and *Hipposelinum* (Horse Parsley), (Theo. i. 9, 15, 16, 19, iv. 9; Bil. 70; Stack. 65). These ancient synonyms are probably in inextricable confusion.

ARBUTUS. *A. Unedo* (*κομαρος*) is a plant easily identified. It is admirably described by Clusius, Hist. rar. Plant. p. 47, where there is a good figure of this ornamental shrub. This species grows wild in the south-west of Ireland, and commonly

in the southern parts of Europe. See Theo. i. 8, 15, iii. 16, etc. Bil. 112. Bellonius observed it on Mount Ida. (Bel. in Clusius, 43.)

ARCTIUM. *A. Lappa* (*απαρινή altera*). The term *Aparine* is a very well known illustration, not of the mutability of species, but of the mutability or protean character of names, not merely of specific, but also of generic names. It has been applied to species of the genus *Rubia*, *Galium*, *Asperula*, *Lycopsis*, *Asperugo*, etc. It now fills a humbler situation. Sprengel, without hesitation, enters *Aparine* as a synonym of *Arctium Lappa*, and quotes Theophrastus, vii. 14. Stackhouse enters "7, 8, Theoph." after *Aparine*, and describes the plant as having "a climbing stem," *caulis scandens*. The latter does not refer to *Arctium* as being synonymous with *Aparine*.

ARIA. *Pyrus Aria*? Billerbeck, p. 132, writes concerning this shrub or tree, "*Aria* (Theo. Hist. iv. 8) has a close resemblance to the Laurel. Its wood is hard and dense, like that of the Oak (v. 5); very durable; yields the best charcoal. On Mount Athos, *Sibthorp*." Clusius writes, "In rocky places (in Pannonia), *Aria* (Theo.), as some think, is frequent. Its leaves are like those of the Hazel or Alder, only very hoary (white) on the underside. Its fruit is scarcely edible (*minime edulem*), and grateful to no animals except birds." (Clus. p. 9.)

It is not certain that *P. Aria* of modern botanists is the *Aria* of Theophrastus. (*Vide* Theo. iii. 6, 16, v. 1, 4, 5, 6, 10.)

ARISTOLOCHIA. If Theophrastus had any definite species of this genus in his mind's eye, it has not been identified, neither by ancient nor modern botanists. See Bauh. 307 b, and Tragus, 178, 179.

Sprengel says that *A. cretica* may be the species in Hist. Plantarum. Billerbeck intimates that *A. Clematitis* is not uncommon as a spontaneous production of several European countries. (Bil. 225; Theo. ix. 13, 15; Stack. 11.)

ARUM, *apov* (Theo. i. 9). This, according to Stackhouse and Billerbeck, is *A. Dracunculus*.

ASPARAGUS. *A. officinalis* (Linn.). There is no hesitation about the identity and nomenclature of this plant, which appears in sandy soils on seashores, meadows, etc., in many countries of Europe, and appears to have been a popular esculent in very early times. Bellonius (in Clus. clxxix.) observed it in Crete.

Asparagus officinalis; *stolones εκ της Ασπαραγίας* ("the Asparagus bed") *edules*; "the shoots from the Asparagus bed are eatable." Augustus liked Asparagus (Suetonii Vitæ; Bill. 93).

ASPHODELUS. It may be sufficient under this name to state that our Lancashire Asphodel is not the plant intended by Theophrastus, vii. 9, 11, 12. We have borrowed the name; but who knows what plant the early Greeks intended by this name?

ASPLENIUM. *A. Trichomanes*. This common fern, and also *Athyrium Filix-femina*, are believed to be those described or noted by Theophrastus. (Bil. 250, 251; Stack. 76; Theoph. vii. 13, ix. 20.)

ATRIPLEX, *άλιμος*. The name given by Theophrastus to some plant of this family appears in our Flora; and possibly it may represent the name of a species common to both England and Greece.

AVELLANA, *ήρακλεωτικη*, Hazel (Theo. i. 16, iii. 7, 8). Theophrastus describes two species, *ή. αγρια*, *Corylus Avellana*, and *ή. ήμερα*, *C. Colurna*, English, Filberts. See CORYLUS.

AVENA. Two species of this genus, viz. *A. fatua* and *A. sterilis*, are believed to be the same as those mentioned by Theophrastus under the names *Ægilops* and *Bromus*. (Bil. 24; Sp. i. 80; Theoph. viii. 9; Stack. 4, 15.)

Theophrastus records the mutation of Spelt, a kind of wheat, into the Wild Oat. Virgil also says, that in ill-cultivated fields, "where sleepy Darnel and Wild Oats abound,"* the precious crops perish.

Billerbeck informs us that in the more ancient times Oats were unknown, and that the Romans were indebted to the Celts and Germans for their knowledge of the use of this grain.

BETULA, *σημυδα* (Theo. iii. 14), *B. alba*, Birch. Wm. Turner writes thus:—"Byrche is called in Latin *betula*, or as some wryte, *betulla*; in Greke, *semyda*, etc. . . . I have not red of any vertue that it hath in physik; howbe it it serveth for many good uses, and for none better than for betynge of stubborne boyes, that ether lye or will not learne." (Part i. p. 35.)

BLITUM. Under the name of "Blite," many plants were described, both in ancient and modern times, most of which are now known by the names of Amaranths, Chenopods, etc. As the genus is now restricted, only one plant has been observed in

* "Infelix lolium et steriles dominantur avenæ."

Britain, viz. *B. virgatum*, and of this only a few stragglers were seen at Wandsworth. See 'Phytologist' for November, 1859. It has a considerable European range, viz. from the south of Sweden to the south of Europe. Theophrastus observed that the seeds of Blite are covered with a very thick episperm. This is characteristic of the order.

BROMUS. Several species of this genus, as applied in modern times, grow in Greece, and they have already been noticed under the head *Ægilops* and *Aira*. (Bil. 23 ; Theo. viii. 4.)

BUPLEURUM, βουπρηστις. This is a very doubtful plant. Sprengel states, *forte* (probably) *B. rotundifolium*. Billerbeck names two species as classical plants, viz. *B. longifolium* and *B. fruticosum*, but does not say that either of them is the *Buprestis* of Theophrastus. Stackhouse says that even the class of *βουπρηστις* is uncertain. See Spr. 84 ; Bil. 66 ; Theo. vii. 8.

BUTOMUS. This plant, *B. umbellatus*, is by Sprengel identified with that of Theophrastus, b. i. c. 11. Billerbeck, on the other hand, says that *Butomus*, Th., is *Sparganium ramosum*, L., and quotes Theoph. b. iv. c. 8. Possibly both these learned authors may be right. Both plants grow in Greece or in its immediate vicinity, and the venerable ancient botanist may have described both plants under the same name. Nomenclature was not a hobby in those early simple times.

BUXUS, Box (πυξος). This eminently beautiful shrub (*B. sempervirens*) grows all over the middle and south of Europe, from England to Greece. This is one of the few plants with few aliases ; there is no question about its name and history.

CARDUUS (ἡ ἀκανθῆ, ἡ κεανωθος). Sprengel (p. 101) quotes Hist. Plant. iv. 11, as the authority for identifying *C. arvensis* and the plant of Theophrastus. Billerbeck (p. 207) appears to agree with Sprengel. The latter quotes F. Columna, Ecphrasis (i. 12). It is (i. 46) in the edition of 1616, Rome. This is probable, even though the species is not Greek, on Nyman's authority (Sylloge, 25), "Omn. exc. Sard. Græc.," that is, "Throughout Europe, excluding Sardinia and Greece." Theophrastus may have observed it as a straggler, or in some of the regions adjoining Greece ; but it is far more probable that he merely intended to describe the *Thistle* in general, than that he did describe any specific member of the great family of the

Thistles in particular. *C. acanthoides* and *C. nutans* are Grecian plants.

CARLINA (*χαιμαιλεων λευκος*, Theo. Hist. ix. 13). Sprengel enters *C. acaulis* as the same that is described by Theophrastus above quoted, and, without any hesitation, Billerbeck agrees with Sprengel, but quotes Hist. Plant. vi. 1, and enters the name *ακανος*, and intimates that another plant is joined with this under the name *χαιμαιλεων*, p. 209, last paragraph. This lessens our confidence in the identification of the plants of Greece described by her ancient botanists. The name *Chamæleon* is the only certain historical fact, and it even is as uncertain in its application as is the colour of the creature (lizard) which is called in Greek, *Chameleon*. The plant is extensively distributed through Europe, from Norway to Macedonia and Thrace.

CASTANEA. The Chestnut-tree is not, perhaps, to be accounted the spontaneous growth of the British Isles, although in some favourable situations it may spring up from the remains of the uncollected fruit of former seasons. It is however one of the few plants noticed by the ancients, about which there is no dispute. It forms an important part of the food of the people who live in the southern parts of Europe, and it was highly esteemed in Greece, as may be inferred from its name, *διος βαλανος*, divine or excellent nut. (Th. iii. 3, 7; Stack. i. 7.)

CARPINUS, *ζυγία*, *C. Betulus*. (Stackhouse, 19, Cat. Syst.; Theo. iii. 4, 6, 7; Billerbeck, 232.) Theophrastus relates that it (Hornbeam) grows in mountainous parts of Macedonia; that it is of quick growth; that the wood is hard and brittle (v. 4). In Clusius, Sib. i. p. 55, there is an excellent figure of this tree, which he calls "*οστρυνς* Theophrasti."

CAUCALIS. This name, given by the early Grecian botanists to many plants, is a name, and no more, in relation to British botany. Neither of our British plants so called, is identical with the plants so called by the classical ancients.

CENTAUREA. This was a comprehensive term in ancient, as it still is in modern, botany. There is great uncertainty about the plants to which the name *Centaury* or *Centory* is given.

Centaurium is the name of a species of *Erythræa*. Both generic and specific names are Greek. The plant is also Grecian, though it be not certain that our species is described by Theophrastus.

Centaurea Cyanus (μικρὸν Ἡρακλεῖα), the Cornflower or Bluebottle, still found in Greece. See Sibthorp. This ornamental plant is distributed all over Europe, except the extreme north. (Bil. 222; Spr. 102; Theo. 9, 13.)

Modern botanists would hesitate before joining the Poppy and Bluebottle together in one genus or even order. The ancients combined plants on slenderer grounds than those on which they united the Poppies and the Cornflower, *Papaver* and *Centaurea*, viz. that both Poppies and Cornflowers (Bluebottles) grow in cultivated fields and on rubbish or waste places, and they are both in flower at the same time. Fabius Col., in his 'Phytobasanos,' pp. 74-79 (Milan, 1744), has a long dissertation on this plant and its relations to the Poppy. In his article, "Papaver Heracleum Theophrasti," this learned botanist proves to his own satisfaction, if not to that of his readers, that there were ample reasons for this odd classification. His commentator, who lived a century later, disapproves of what he calls "servile subjection to the wisdom of the ancients."

CERASUS. Theophrastus describes this tree and fruit in his 3rd book and 13th chapter. He says that the wood is hard, the bark valuable, like that of the Lime (*Tilia*), and that there was a peculiar method of stripping off the outer bark so as to leave the inner *liber* (fibrous part) entire. He says the flowers are white and umbellate, like the flowers of the pear; also, that the fruit is red, etc. (Stack. 35; Spr. 92; Theo. xi. 7, 13.)

CHAMÆDRYS. This is a term very extensively employed both in ancient and modern botany. It had reference, partly to the habit of the plant (reclining), and partly to the shape of its leaves (like the Oak-leaf). It is now the specific name of two British species, *Veronica Chamædrys* and *Teucrium Chamædrys*, plants which grow in the south of Europe. It is never pretended that these are the species to which these names were originally given. *Chamæpitys*, Chamomile (χαμαιμηλον), Chameleon, etc., are all derived from the same radical term, χαμαι (on the ground).

CHELIDONIUM. The Greater Celandine, *C. majus*, is a generally distributed plant throughout Europe, from Scandinavia to Greece, near human dwellings. It is by general consent allowed to be the Swallow-wort of the earlier and mediæval botanists. (Theo. vii. 14; Stack.)

Gaza translates the term *Chelidonium* by *hirundinaria*. This is the name of the plant in all the languages of Europe. *Chelidon*, *Hirundo*, *Schwalben*, and *Swallow*, are exactly synonymous.

The Lesser Celandine is *Ranunculus Ficaria* or *Ficaria ranunculoides*, a plant which cannot be confounded with the real Celandine. It differs essentially from the former in size, form, time of flowering, locality, etc., as well as in name.*

CHENOPODIUM Bonus-Henricus, ἀτραφαξίς. (Theoph. vii. 1, 2, 3.) Pliny describes two species of this ancient genus. One is the above, according to Billerbeck and Stackhouse (Bil. 6; Stack. 7, Cat. System.); the other is our modern Spinach, *Atriplex hortensis*. Sprengel enumerates the latter among the plants of Hippocrates (i. 40).

CICHORIUM. Chicory or Endive are both wild and cultivated in many parts of Europe. *C. Intybus* (κυχωριον), common Chicory or Wild Chicory, as it is called, to distinguish it from *C. Endivia*, Endive, is general, from the south of Sweden to Greece. It is also an Egyptian plant. (Bil. 202; Theo. i. 16.) Sprengel enters it in his list without any mark of doubt (i. 100). See Bil. 202. Stackhouse, Illustr. p. 36, intimates no doubt about the identity of the modern with the ancient plant.

CNICUS or *CNECUS*. This ancient name was, in former as well as in recent ages, a synonym of *Acantha*, *Carduus*, *Cirsium*, etc. (Stack. 37.)

COLCHICUM. The common Meadow Saffron, *C. autumnale*, ἐφημερον: so called in Greek, because if any one eats it, he will not live a day. Sibthorp saw it on Mount Hymettus, near Athens; also near Mount Parnassus. Its range is from Denmark to the south of Europe. (Bil. 97; Theoph. ix. 16, i. 11; Tragus, 760.)

The farmers in the west of England know to their cost the truth of this common Greek appellative. Stackhouse does not notice this plant as one of Theophrastus's; he merely says, in his 'Lexicon Theophrasti,' ἐφημερον φαρμακον, *venenum quod cito enecat* (eodem die), (ix. 6; Spr. ix. 16). It is not certain

* Nomenclature is probably the most incomprehensible of all imaginable sciences; or in other terms, the inventors of nomenclature are the most capricious of mortals. In not very remote times, *i.e.* not more than thirty years ago, the public conveyances in France were called *Hirondelles*, "swift as swallows," because they travelled at a snail's pace. *Sic lucus a non lucendo*.

that this plant is the *ephemeron* of Theophrastus, but it is quite certain that it possesses venomous properties, and that it grows both in Greece and in England.

COMARUS or CŌMARUS is *Arbutus Unedo*, L. See ARBUTUS. Clusius, in *Hist. Rar. Plantarum*, p. 47, gives an excellent description of the Strawberry-tree; he also supplies a very good figure of the plant, both in flower and in fruit.

CONIUM. The spotted Hemlock is well known, and that our plant, *C. maculatum*, is the plant of the ancients is generally admitted. Criminals were put to death or poisoned with the juice of this plant. See Diogenes' *Lives of the Philosophers*, in life of Socrates. (Theo. i. 8, vi. 2, ix. 8.)

CONVOLVULUS. This genus of handsome plants is called *Jasiōne* in the Greek language (*ιασιωνη*). The round-headed pretty plant of the order *Campanulaceæ*, so called by modern botanists, is not the *Jasione* of the ancients. Theophrastus's description is, that though it be a monopetalous flower (*μονον ον*), yet it has the expansion or development of a polypetalous blossom. This expresses fairly the flower or corolla of any of the modern *Convolvuli*. Stackhouse's reference, viz. "i. (21)," should be the 17th chapter and near the middle of the 39th page of Stackhouse's edition of the *History of Plants*.

C. sepium (*ιασιωνη*). This ranges in Europe from Scandinavia to Greece. Doubtful native of North Wales, north of England, and Scotland (?).

It is not quite certain that *Jasione* of Theophrastus is *C. sepium* of the moderns, but it is most probable that the ancient name was that of some *Convolvulus*.

CONYZA. This plant, with *Origanum*, etc., is enumerated among the herbaceous thornless or non-prickly plants. According to Theophrastus there are two species, the male and the female. The doctrine of sex in plants is not a novelty. The evidence of this ancient belief in the sexes of plants still exists in the terms *mas* and *fœmina*, as names of species; as *Cornus mas*, *Filix mas*, also, *C.* and *F. fœmina*. Stackhouse, as usual, in his *Illustrations*, enters the name with hesitation. Billerbeck says (p. 215) *Erigeron viscosum* (*viscosus*?) is *Conyza mas* (Th.), and *E. graveolens* is *C. fœmina*. As these do not represent British species, they may be passed over without further remark. We certainly have the name from Greece, although we may not have the Greek plant.

CORIANDRUM. This plant, which is of rather uncertain occurrence in most countries, is called in Greek, *κοριανός*, and is said to be wild in Italy and the south of Europe. Theophrastus (Hist. vii. 1, and de Causis, iv. 3) says that there are many kinds of Coriander. From this it may be inferred, that his acquaintance with the plant now called Coriander was not very intimate. See Bil. 76. Whatever it be, it was cultivated in Greece in Theophrastus's time (see Stack. 39), and it is still cultivated; and in the British Isles it is one of the most uncertain of our foreign stray plants.

CORNUS. The Cornel-tree, called in the Greek, *κρανεια*, and containing two sorts, the male and the female, *C. mas* or *mascula*, is described as producing valuable wood; *C. sanguinea*, on the other hand, bearing uneatable fruit and spongy, worthless wood. Our British species is the female, *θηλυκρανεια*, *Cornus fœmina* of the ancients. (Bil. 34.)

CORONOPUS, or Crowfoot. This name in ancient times was the representative of many plants, and the moderns have not quite discarded it. Both Sprengel and Billerbeck unhesitatingly refer *Plantago Coronopus* to the plant of Theophrastus. (Spr. 82; Bil. 33.) Stackhouse says that it is of the 4th class, *Tetrandria*, and that its name is descriptive of its habit, *foliis radiatis super terram* (Theo. vii. 9), "the radiate leaves flat on the ground."

CORYLUS. This word is probably derived from *καρυα*, a nut, and applied to many nuts with a qualifying word, as *nux regia*, the "royal nut," or Walnut, *nux persica*, the Almond, etc. The Hazel, *C. Avellana*, is common throughout Europe; Theophrastus notices both the wild, *αγρια*, and the cultivated, *ήμερα*, hazel-trees (Hist. iii. 15).

It might not occur to every reader that Walnut means foreign nut, in contradistinction to the common nut. Wales and Welsh, in the Teutonic languages, mean foreign. The Italians are Welsh to the Germans.

CRATÆGUS. The Hawthorn, *C. Oxycantha*, is a common tree in most parts of Europe, and has been known from the earliest times. Authors are not of one mind about the *Cratægus* of Theophrastus. Billerbeck enters the common Whitethorn, *C. Oxycantha*, as the equivalent of *Cratægus*, Theo. Clusius, in his 'Historia Plantarum,' p. 9, states positively that *C. torminalis* (*Sorbus torminalis*) is Theophrastus's plant. In this opinion he

is followed by Stackhouse. If the father of botany had transmitted to his descendants as good a figure of his plant, whatever it be, as Clusius has given us of the *Plantanus orientalis* (*occidentalis?*), which occupies a considerable part of this ninth page, there would have been no difficulty in identifying the plant of the ancient Greek.

CROCUS. Several species or forms of this well-known genus of plants are recorded by Theophrastus as abounding in the groves and on the hills of Greece. They are mentioned among other bulbous-rooted plants, as garlic, lily, iris, etc. Saffron is still used medicinally, but its cultivation in this country has long ceased.

CUSCUTA. The Dodder is named by Theophrastus, according to Billerbeck, 36, Caus. ii. 3, *καδυντας*. Stackhouse says that its class is uncertain, which could not be the case if Dodder be the plant intended by Theophrastus. According to Sprengel our *C. europæa* is the *Orobanche* of Theophrastus's Hist. vi. 6, so called because it grew round the pulse and bean crops, and choked them. Sp. 83.

CYPERUS. Of Cyperaceæ, Billerbeck, p. 17, notices that *Cyperus longus*, also *Scirpus Holoschænus*, *S. mucronatus*, et *S. maritimus*, are found in Greece. He does not say that they are all described by Theophrastus. Sprengel has in his list, in addition to the above, *Schænus nigricans*, but he has not given *Cyperus longus* as one of Theophrastus's plants.

DAPHNE. This poetic term, which frequently occurs in the works of the ancient Greek botanists, is intended to signify some sort of laurel. Two British species bear this name, viz. *Daphne Mezereum*, the Mezereon shrub, and *D. Laureola*, the dwarf Laurel. They are not noticed by Theophrastus. The only laurel-like plant common to Greece and Britain is probably the prickly shrub which bears a very unpoetic name in our vernacular, *Butcher's-broom* (Bil. 244). *Ruscus aculeatus*, or *κεντρομυρρινη* and *κεντρομυρσινη*, for it appears in both forms, receives a more poetic and elegant name from the imaginative Greeks, than it has obtained from the more practical inhabitants of the west. Prickly Myrtle or Prickly Laurel is a politer and more euphonious name than Butcher's-broom.

DIANTHUS, the divine flower (*διος ανθος*), is enumerated by the early historian of botany as one of the herbaceous plants of Greece. Many members of this family are common to England

and to the climes of the South-east; but it is very uncertain whether any of our British members of the Pink family were described by Theophrastus.

Δρυς, *Quercus*; *Δ. ετυμοδρυς* forsan. *Q. Robur*, Stack. Cat. Syst. 19; Theo. i. 8, 9, 13, 16; iii. 4, 6, 7, 9. Billerbeck is of the same opinion (Fl. Clas. 231).

ΕΛΕΑΓΝΟΣ. Neither Billerbeck nor Sprengel enter our *Hippophaë* as the plant intended by Theophrastus under this name. The Greek name of our Teasel has almost the same sense as *Hippophaë*: it signifies something which makes "sleek" or "smooth."

ΕΛΥΜΟΣ. This cereal is stated by Theophrastus to produce very durable grains or seeds. "*Grana ελυμον et κεγχρου maxime durant*," viii. 1 and 10.

ΕΦΗΜΕΡΟΝ, *εφημερον*, Theoph. vi. 6. Clusius states that this plant is the same as *Colchicum* of Dioscorides. Its poisonous character may be inferred from several of its more modern names, viz. *Mort aux chiens*, dogs'-bane, etc. (Clus. 201, bottom of page).

ΕΠΙΛΟΒΙΟΝ. Sprengel enters, p. 89, *Epilobium alpestre*, as equivalent to *οινοθηρα* of Theo. Hist. ix. 20. This is probably the first authority that can be quoted for the generic name *Oenothera*. See *Oenothera*, *infra*, where the *Oenothera*, Theoph., is assumed to be *Epilobium angustifolium*.

ΕΡΙΚΑ. Theoph. i. 23. Our British heaths do not grow in Greece. We have borrowed only the name of the genus.

ΕΡΙΓΕΡΟΝ. This plant, whatever it was, is enumerated among *λαχάνα*, pot-herbs. Sprengel enters *Senecio vulgaris* as the equivalent of *ηριγερων*, Th. viii. 7, 8. Billerbeck places *Erigeron viscosus*, or *Inula viscosa*, as a synonym of the plant of Theophrastus, and quotes Hist. Pl. vi. 2, Stack. 25. (See *CONYZA*, *supra*).

ΕΡΥΣΙΜΟΝ, *ερυσιμον*. This is placed among the agrestal plants (*αρουραιας*), and Stackhouse writes "*for*san (perhaps) *E. Barbarea*, L., *Barbarea vulgaris*, Ait. The leaves are without nerves or veins (viii. 3); stem somewhat fistular. It is related to *Sesamum*, and abounds in oil (viii. 7). Are these characteristics of our *Barbarea vulgaris*, or of any other known British plant belonging to this genus?"

ΕΥΟΝΥΜΟΣ. William Turner, in his 'Herbale,' 1554, part i.

pp. 89 and 90, intimates his belief that our Spindle-tree, *E. europæus*, is the *Euonymus* of Theophrastus. Our excellent countryman gives a good description of this shrub, and an indifferent figure.

Clusius, Hist. Plant. 57, gives a characteristic description and figure of *E. europæus*, and admits that though it is thought by the greater portion of the learned to be the *Euonymus* of Theophrastus (*potiori doctorum parti*), yet some are of another opinion. These believe that *Ledum alpinum* is the plant in question. See Clus. p. 82.

EUPHORBIA. Several species of Spurge are described by Theophrastus under the generic name *Tithymalus*, by which this genus was known and was written about for many centuries. Billerbeck enumerates among others the following British, or reputed British, species, viz. *E. Characias*, *E. Paralias*, *E. Helioscopia*, *E. Cyparissias*, *E. platyphyllos*, *E. Lathyris*, *E. Peplis*. The first and second of these are attributed to Theophrastus; the others to Dioscorides and Pliny. Sprengel enters four as included in the 'History of Plants' by Theophrastus, two of which are connected with our 'Flora,' viz. *E. Paralias* and *E. Peplis*.

Euphorbia orientalis of Sprengel is *E. Characias* of Billerbeck. See Bil. 117, 120; Spr. 91; Stack. 75.

E. Paralias was observed by Peter Bellonius in Crete. See Bel. in Clus. i. 24.

FAGUS. For *F. Castanea* see CASTANEA, Chestnut.

FAGUS. The Common Beech, *F. sylvatica*, is the *οξυα* of Theophrastus, Hist. iii. 7 and 10. In the fifth book and eighth chapter there is a very good description of the wood of this tree, which was used in those early times for bed-posts (*εις κλινάρια*), as it is still (Stack. 54). In the county Bucks, where this tree abounds, especially in its southern parts, about Chesham, Wendover, Rickmansworth, etc., thousands of chairs and bed-posts are manufactured and sent to London. Much cheap common furniture is made of this wood.

FRAXINUS *excelsior*, according to Stackhouse, is *βουμελια*, Theo., and *F. Ornus* is *μελια*, Theo. Stack. Tab. Syst. 3.

FUCI. About ten genera or species of seaweeds are entered by Sprengel, 108, 109, and attributed to Theophrastus. These are now called (see Hooker, Br. Fl. vol. ii.), *Desmarestia aculeata*, *D. saccharina*, *Laminaria bulbosa*, *Gelidium cartilagineum*,

Cystoseira tamariscifolia, *Halydria siliquosa*, etc. They are all named *Fuci* by Sprengel.

One of the commonest of these is that usually called Bladder Fucus, *F. vesiculosus*, Linn.; Stackhouse, 4; Withering 4, 84; and Clusius, i. 21. This is *Quercus marina*, *δρυς ποτνια*, of Clusius. The latter author names and describes several other marine algals, and gives a figure of one (i. p. 35), which he names *Abies marina*, probably *ελατη ποτνια* of Theophrastus.

The ancient botanists were frugal of their nomenclature: they used few and short words as representatives of their species. Compare the terms sea-onion, sea-leek, sea-oak, sea-pine, sea-vine of Theophrastus, with the sesquipedalian vocables now in daily use, of which we have examples in *Desmarestia*, *Cystoseira tamariscifolia*, etc. These are fair samples of modern nomenclature, which now passes all understanding, barbarous, unintelligible, and inconsistent.

Again, few plants in these primitive times had more than one name. One name had sometimes to perform double or even triple duty, or was applied to several distinct objects. This was a defect in ancient nomenclature. In modern times there has been a tendency to give a plant twice as many names as describe a Castilian nobleman of the highest rank, and more aliases than any cracksmen of Old Bailey notoriety needs to conceal his identity. A plant is a mere *parvenu*, an upstart, a thing of yesterday, which cannot boast of having a handle of from six to a score of pretentious synonyms, every one of which is indorsed by several respectable authorities who vouch for the respectability of their respective bantlings.

GALIUM. The term *Aparine*, so common as a generic name in ancient and mediæval botany, is now restricted to one species of the genus. Dioscorides uses *γαλιον*, *Galium*, as a synonym of *Aparine*, *απαρινη*. Billerbeck thinks *G. verrucosum* is the plant of Theophrastus. Sprengel in his list enters *G. Aparine* without any remark. In the History of plants, viii. 8, it is said to grow among the crops of pulse, *inter segetes ervi*, Stack. 10. *G. verrucosum* was probably the common representative of the genus in Greece, as *G. Aparine* is in the north of Europe. In Hist. vol. vii. 8, its property of adhering to the clothes, etc., is duly recorded.

GLADIOLUS. The Greek synonym for this term is *ξιφιον*, a

name given to plants having sword-shaped leaves like some Irises, Asphodels, etc. Billerbeck translates Xiphion, or Phasganon (Hist. Pl. vii. 11, 12), by *Gladiolus communis*, a plant only recently added to the 'British Flora.' Some of the Irises are probably combined with Xiphion, or with Xiris. See Hist. Pl. ix. 9.

GLAUCIUM, *μηκων*. The Poppies abound in Greece, and several were distinguished in early times. *G. phæniceum*, an uncertain British straggler, is entered by Sprengel (94) as the same called *μηκων κερατιστης* by Theophrastus. Billerbeck (p. 137) states that Theophrastus, followed by Pliny, distinguishes five sorts of Poppies, viz. *P. Rhæas*, *P. somniferum*, etc. The black Poppy, *μελαινα μηκων* of Theophrastus, ix. 13, is by Billerbeck considered the same as our modern *Ræmeria hybrida*, of which Clusius (i. p. xcii.) has an excellent figure. On the same page there is a good figure of *μηκων κερατιστης*, *G. luteum*, which till very recently was called *G. corniculatum*. It is probable that Theophrastus included both species under his name Horned Poppy, one having a yellow, the other a blue, flower.

HEDERA, Ivy (Gr. *κισσος*, or *κιττος*, Theo. i. 4, 15). This plant when young has angular leaves; when old the leaves are ovate. Hence many species or forms were named and described by Theophrastus. See Stackhouse, 36; Bil. 56, 57.

HELMINTHIA, a name applied to plants having *vermifugal* properties. See PICRIS.

HIPPORHEOS, *ἵπποφωσ*. *Dipsacus fullonum*?, Theo. vi. 3, 4; ix. 14. Billerbeck relates that this plant is common in Peloponnesus. Stackhouse quotes Theophrastus with a mark of uncertainty (?).

HIPPURUS, *ἵππον* or *ἵπνον*. The plant described by Theophrastus as growing in the lake Orchomenium, is conjectured either to be this, *H. vulgaris*, or some *Equisetum*. Bellonius records the Mare's-tail among the plants seen by him on Mount Athos.

JUNIPERUS, *αρκευθος*. This genus is well represented in Greece, and it is not a very improbable conjecture that *J. communis* is one of them. See Sprengel, i. 106.

LAPATHUM. A very general name for acid herbs in the early and middle ages. One of the most eminent is "Patience Dock," *Rumex Patientia*, a garden plant. Theophrastus is quoted conjecturally as the describer of several other species of Dock. See Sprengel, 89; Bil. 96, 97.

Tragus, p. 318, *sub voce Rumex*, relates that two species are noted by Theophrastus, viz. *Rumex sylvestris*?, *R. acetosa*. Sibthorp observed many of our native species in Greece.

LAPPA, *απαρινή*. This comprehensive and very popular early name comprehended such plants as produced prickly fruit, like the Burdock. *Lappa Bardana*, Goose-grass, *Galium Aparine*, *Cynoglossum* and *Asperugo*. It is used by Gaza, the early translator of Theophrastus, as the equivalent of Aparine, which is employed by the Greeks in an equally comprehensive sense. See APARINE.

LATHYRUS, *αφακή*. Two British species of this genus are attributed to Theophrastus, both by Sprengel, 98, and Billerbeck, 186 and 187, viz. *L. Aphaca* and *L. tuberosus*, Hist. Pl. viii. 3, 10. Besides these, supposed to have been described by Theophrastus, Sibthorp found in Greece *L. hirsutus*, *L. latifolius*, *L. Nissolia*, *L. pratensis*, and *L. sylvestris*.

LAVATERA, *μαλαχή*. On this plant Stackhouse observes, "*Lavatera forsan arborea*" (Hist. i. 4). It is enumerated with the esculents. In Theo. vii. 7, it or some other Mallow is said to be excellent food. See Bil. 79; Stack. 47.

LEMNA. One of the Duckweeds, *L. trisulca*, is generally understood to be the *Lemna* of Theophrastus, Hist. Pl. iv. 11: *τοῦτο πλεῖον το καθ' ὕδατος*, "it entirely swims on the water." Sprengel, 402, does not place it in his 'Flora Theophrastica,' but attributes its first notice to a much later period. Billerbeck quotes the book and chapter cited above from Stackhouse, 46.

LEONTODON, *αφακή ἑτέρα* (another *Aphaca*). A Chicory-like plant, uneatable, being so bitter (Hist. Pl. vii. 11). Germinates *πρωτοῖς ὑετοῖς* (early rains), (vii. 8), and flowers throughout the summer. Rather slender marks for the identification of the plant. See Bil. 205; Sprengel, 100. The latter learned author writes, "*florens vere primo*." Stackhouse says, "*Germinat vere primo, . . . floret per totam æstatem* (Stack. 13). This is indeed true of our *Leontodon Taraxacum*, but it may also be affirmed of many other plants which flower early in spring, and remain in flower all the summer.

LEUCOJUM. This name, which means "white Violet," was applied in early times to many different species, genera, and even orders of plants. Sprengel (p. 87) applies it to *L. vernum*, and remarks that "from its bulbous root and early flower it can

be nothing else." It may be so, but his reasons are not absolutely conclusive. He quotes Hist. Pl. vi. 7. Billerbeck enters, as equivalents to *Leucojum*—*Viola odorata*, *V. canina*, *V. tricolor*, *V. lutea*, but he omits the Snow-flake as one of the Grecian *Violets*. The Wallflower, the Stock, and the Lady's Violet, *Hesperis*, have claims to this ancient popular name. Stackhouse (p. 45) enters some of the *Loti* as part of the plants comprehended under the general name, *Leucojum*. It would not be very difficult to collect from our own old Herbals the names of as many plants called Violets, which have their peculiar adjuncts whereby they are respectively distinguished.

LIBANOTIS. (Theo. iv. 6 ; ix. 2.) This is also a general term in the Greek language, and means both the plant and its produce. Billerbeck (71) puts it as equivalent to *Meum Athamanticum*, for which he quotes Dioscorides and Pliny. Stackhouse states that it is an odoriferous plant, which grows naturally in Syria and the East (Stack. p. 35). This was the name of some odoriferous shrub, which has not been satisfactorily distinguished from other herbs ; and was more probably an Indian, or Arabian, or Syrian plant.

LINUM, λινον. Ling, lingel, linen, lint, line, and many other terms are evidently derived from a common source. *Linum usitatissimum*, *L. sativum*, C. B. 214, is generally assumed as the same plant that the Greeks called λινον,—*Linum*, Lat. (Theo. viii. 8 ; Stack. 46.)

LOLIUM, αἶρα. *Aira* in Greek is supposed to be equivalent to the Latin *Lolium*, and the English *Darnel*, *L. temulentum*, the intoxicating grain so injurious to wheat when mixed and ground up with this valuable cereal. Theophrastus (Hist. i. 7, 14, etc.) praises wheat cleared of *Lolium*, σιτοι αἰρων καθαροι. This *Lolium* is still named ἡρα in Laconia, where Sibthorp observed both *L. perenne* and *L. tenue*.

LOTUS. This term in Theophrastus includes our Waterlily and other plants, which, though herbaceous (πωδης), are not aquatic, such as *Lotus*, *Melilotus*, etc. Sprengel enters σιδη of Theophrastus (iv. 11) as our *Nymphæa alba*. See Sp. 94. Billerbeck quotes νυμφαία, Theo. ix. 13, and affirms that this is our Waterlily. Stackhouse prudently declines the identification of the *Lotus*, *Nymphæa*, and *Sida* of Theophrastus, and contents himself with quoting the books and chapters of his author, and leaves the inference to the judgment of his readers. The father

of botany is credited with another *Lotus*, not an herbaceous, but an arboreous species, which gave origin to the term *Lotophagi* (Lotus-eaters). This tree, now called *Celtis*, produces a fruit which was very grateful to the companions of Ulysses (Od. ix. 84).

LYCHNIS. This is a general term applied by the ancients to woolly plants, or to such as produced leaves suitable for lamp-wicks. Examples are seen in *Verbascum Thapsus*, *Lychnis Coronaria*, etc. *L. Githago* was observed in Greece by Sibthorp; but it is not attributed to Theophrastus. (Bil. 115; Stack. 46.)

MALVA, *μαλαχη*, Mallow. See above, under LAVATERA. Our word Mallow, Lat. *Malva*, French *Mauve*, etc., are derived from the Greek. Theophrastus states that by cultivation, *δενδρονται*, it becomes a tree; and hence it has been conjectured that the Tree Mallow, *L. arborea*, was meant by Theophrastus. There is a form of *Brassica* grown in Jersey which attains to the height of 12 feet, and is the so-called *Tree Cabbage*, and it deserves this title fully as well as the Tree Mallow merits its name.

“Theophrastus in the nynthe booke *de historia plantarum*, writeth that certayn thynges by dressyng and trymmyng departe frō theyr kynde and old nature, as the Mallow doth, sayeth he, whiche when as it is by nature but an herbe, yet groweth up into the greatenes of a tre. He sayth that the garden Mallow within six or seven monethes groweth so highe, that the stalck of it will serve for a lance-staff, and that therfore diverse use the stalkes of Mallows for staves” (Turner’s ‘Herbale,’ part ii. p. 45).

MEDICAGO, *μηδικη*. Etymologists say that the plant received its name because it was originally introduced from Media into Greece. It is not impossible that this may be the origin of the term, though the relations of the Greeks with the Medes and Persians were not usually of the most friendly nature. *M. sativa* is the only one which is common to both Greece and Great Britain. See Theo. viii. 8; and Bil. 197. The Lucerne was celebrated by Pliny, Varro, Virgil, Columella, Isidore, etc.

MELAMPYRUM. This term literally means “black wheat,” and might have received this name from its communicating a black appearance to the wheat when dressed, or from its injurious effects on the flour when any perceptible portion was ground up with the genuine article. Billerbeck refers *M. arvense* to the plant noticed by Theophrastus (Hist. viii. 5, 8), and this is by no means improbable. *M. cristatum*, on the same authority,

is conjectured to be *κραταιος*, Theophrastus, ix. 19; Billerbeck, 160. Sprengel only refers *M. arvensis* to the *Melampyrum* of Theophrastus (i. 96).

MENYANTHES. The plant *μηνανθος*, or *μηνιανθος*, described by Theophrastus (Hist. iv. 11), is referred by Sprengel to our plant, *M. trifoliata*; but Billerbeck (196) supposes the plant now called *Menyanthes* to be *Psoralea bituminosa*, Jew's-pitch. Stackhouse conjectures with much probability that *Menyanthes*, Theo., is *M. nymphæoides* (*Villarsia nymphæoides*), which does grow in Greece, *teste* Sibthorp.

MELILOTUS. This is the name of a plant enumerated with *Lotus* (Hist. vii. 14). Billerbeck refers the anciently described plant to *Trifolium Melilotus*, or *M. officinalis*, of modern botanists. This author states that *M. cærulea* is cultivated in Switzerland, and is employed in the manufacture of blue cheese (195).

MELISSOPHYLLUM. This is the name of a Grecian plant, named and described among the herbaceous and thornless or non-prickly plants of Greece. It has not been identified with our British species. We have borrowed the name, but do not pretend to the possession of the plant. It is conjectured to be the same as *Melissa officinalis*.

MENTHA. The Mints were well known in primitive times for their edible and seasoning properties. Their number was great, and the differences by which they were distinguished were very small. The distinctions between all cultivated plants are probably slight, but they are usually permanent. Who knows the number of British Mints? *M. sylvestris*, *M. rotundifolia*, *M. sativa*, *M. gentilis*, and *M. Pulegium* are referred to the Mints of Theophrastus by Billerbeck and Sprengel. (Bil. 150, 151; Spr. 95; Stack. 50; Theo. vi. 7; vii. 7.)

MESPILUS. The Wild Medlar, *M. germanica*, is by Billerbeck referred to the *μεσπιλη* of Theophrastus. Sprengel enters *Cotoneaster vulgaris* as one of the plants of Theophrastus. We are certainly indebted to Theophrastus, or to some earlier botanist, for the name; but we are not certain that we possess, or even know, the plant which bore this ancient name. Stackhouse enters three plants under this name, viz. *Cratægus Azarolus*, *C. Oxyacantha*, and *Mespilus germanica*.

MYRICA. Gaza, the translator of Theophrastus, sometimes renders this word by *Tamarix*, and sometimes by *Myrica*. It

is entered among the plants of Theophrastus, but not identified with any species now known. Stackhouse conjectures that *M. cordifolia* is the anciently known plant, and quotes Theophrastus, i. 16; iii. 4; iv. 7; v. 6.

MYRRHIS. This plant is by Stackhouse said to be of uncertain class, but enumerated with Anise and Fennel (Hist. vi.). See Stackhouse, 50; Bil., 77. *Λαχανον ευστομον*, a savoury herb (Theo. de Causis Plant. vi.).

NAPUS, *ναπυ*. *Sinapis nigra* (Theo. i. 19; vii. 1).

NARCISSUS. The poetic Narcissus is by some assumed to be the plant meant by Theophrastus (see Billerbeck, 86, *sub voce*). Sprengel says *N. orientalis* (Hist. vi. 6; vii. 12). Others say that the Greek Anemones are to be referred hither. Hence it may be inferred that the Narcissus of Theophrastus is not known. It is possible that this renowned ancient botanist did not intend any specific plant, but rather included under this name a number of species, or even genera, that had some resemblance in leaves, roots, and flowers to the Lilies. Tragus (p. 760) states that Narcissus of Theophrastus is the Colchicum of the mediæval and modern botanists. We are certain of the poetic name, and of that alone.

NARDUS. No one botanist believes that the apparently worthless British grass, *Nardus stricta*, is that which produced the celebrated ancient nard, or spikenard. The plant in question, which produced the precious odoriferous substance which entered into one of the most precious compositions formed by the apothecary's art, is believed to be still unknown. See 'Acts of the Royal Society of London, 1790.' (Theo. ix. 7.)

NYMPHÆA. See LOTUS, above. Sprengel enters both the white and yellow Waterlily under *Nymphæa*, and quotes *σιδη* (Hist. iv. 11) for the former, and *νυμφαία* (Hist. ix. 13) for the latter. Sibthorp prudently confines his remarks to what Theophrastus wrote about them, viz. that they grow in lakes and watery places in Crete, Bœotia, etc., that they have eatable bulbs, round floating leaves, and styptic properties (Stack. 52).

ŒNANTHE. Stackhouse, in his Illustrationes on Theophrastus' History, enters the plant therein so called by the Greeks, among the coronal or garland flowers, such as the Violets, the Pinks, the Hemerocallis, and other celebrated floral beauties. Few of the order to which the modern *Œnanthe* belongs merit a

place among such distinguished associates. Sprengel states that *Ænanthe* of Theophrastus is *Æ. pimpinelloides* of modern botanists; but some will think that the association of the ancient *Ænanthe* with the abovementioned beautiful flowers is fatal to his statement. Stackhouse quotes the same part of the work (vi. 7), and enters *Convallaria* as the synonym of this ancient name. Billerbeck does not quote Theophrastus, and consequently it may be inferred that he did not believe in the identity of *Æ. pimpinelloides* and the *Ænanthe* of Theophrastus.

THIRSK NATURAL HISTORY SOCIETY.

Botanical Exchange Club.

The monthly meeting of the Thirsk Natural History Society was held on the evening of Monday, the 4th of June, Mr. Geo. Maw, F.L.S., Benthall Hall, Broseley, and Mr. John Hunt, Rose Hill, Bowdon, were duly admitted as members of the Botanical Exchange Club. Mr. J. G. Baker submitted to the meeting a paper by Mr. A. G. More, F.L.S., on the *Viola* of the coast sandhills.

He also communicated the following notices, viz. :—

Chenopodium Botrys.—Miss Atwood has forwarded for our inspection an example of this species, gathered in 1858, near Bray, in Berkshire, by Mr. A. Hutton.

Chenopodium ficifolium. Sent by Mr. G. E. Hunt from waste ground at Stretford, near Manchester, where it was gathered by himself in the summer of 1859. New to the Mersey province.

Potamogeton gramineus, Angl. Sent by Mr. G. E. Hunt, from Grasmere, in Westmoreland, where it was gathered in 1858, by Mr. E. Green. New to the Lake province.

BOTANICAL NOTES, NOTICES, AND QUERIES.

NUMBER OF BRITISH BATRACHIAN RANUNCULI.

“Beta” (see p. 189) will probably be glad to learn that he is not called upon to believe in so great a number as 128 British *Batrachian Ranunculi*.

The figures given at p. 138 of the ‘Phytologist’ were simply a

printer's error, as is indeed implied by the (?) of the reader who corrected the proof-sheets, which the writer had no opportunity of revising himself.

Those botanists who are in the habit of referring to the latest (fourth) edition of the 'Manual,' or to the paper published by Mr. Babington in the 'Transactions of the Botanical Society of Edinburgh' (vol. v. part ii.), will hardly require to be told that only twelve species of the Batrachian section have hitherto been recognized in Great Britain.

A. G. MORE.

Bembridge, June 2, 1860.

CUSCUTA TRIFOLII.

From the 'Gardeners' Chronicle,' Feb. 4, 1860, Mr. Babington has ascertained that this agricultural pest was noticed and published by Mr. Dickson in 1800. It further appears from the same article that Clover is attacked by another Dodder, viz. one called *Cuscuta approximata*. The former, viz. *C. Trifolii*, is said to be of European, not Asiatic, origin; also, that it is "common in several parts of the country." The farmers of Kent and Surrey find it by far too common, and it is not confined to these two southern counties.

GOOD-HENRY. (See 'Phytologist,' vol. iv. p. 64.)

"Germani hanc plantam, a fœtido odore, 'gut oder stolz Heinrich' vocant, neque aliud ejus nomen cognoscere undique potui."—*Tragus*, 715, *in loco*.

ANCIENT KEYS.

Will the following note from Dr. Lowth's 'Isaiah,' help your readers in finding the true Culverkey flower named in Walton in his 'Angler'? "Isaiah xxii. 37. A key is an emblem of trust, and the expression alludes to the fashion of keys in old time, which were long and made like a hook, and then laid upon the shoulder and worn there as the badge of an office."

ON STRATIOTES ALOIDES.

This plant (see Review in Nat. Hist. Rev. p. 156, and Géographie Botanique, 714) is considered an alien, introduced from the East. Java, Moluccas, and Malabar are given as its natural homes.

The following extract from Linnæus's 'Tour in Lapland' (Lachesis Lapponica), vol. ii. p. 152, may throw some light on the subject of the distribution of this plant:—"In my journey this day, August 11, between Kimi and Tornea, I met with the *Stratiotes aloides** and the *Butomus umbellatus*, as well as the Mosomora (*Cornus suecica*), the spotted Palma-Christi (*Orchis maculata*), and the Gnidium (*Mezereon*). . . . I found also the Lady's-slipper (*Cypripedium Calceolus*)."

Communications have been received from

A. G. More; John Sim, W. W. Reeves; Mrs. Merrifield; H. Ibbotson; F. Clowes; Dr. Holmes; Sidney Beisley, etc.

* "Ad flumen Kemensem, in fossa sub aqua nascentem, semel legi" (Flora Lapponica, p. 180, no. 222).

ON PRESERVING NEWLY-COLLECTED FLOWERS.

A Simple Method of Preserving Gathered Flowers for a longer period than usual, without changing the water in which they were first placed. By MRS. MERRIFIELD.

Accident has made me acquainted with a simple, and apparently effective, method of preserving cut or gathered flowers as long as they continue in bloom, without changing the water in which they have been placed.

As the process,—the word is too dignified to express so simple an operation, but, as no other suggests itself, it must stand,—as the process, then, is not only adapted for the drawing-room, but must be exceedingly useful to the botanist, who can thus preserve his specimens until he has time to examine them, or can watch the flowering of particular plants, I shall feel great pleasure in making it known through the medium of the pages of the ‘Phytologist.’

Obliged, by considerations of health, to leave for a few weeks my residence by the seaside, and thus lay aside for a short time my favourite study of marine Algæ, I took advantage of the opportunity offered by an inland locality abounding in fresh-water streams, to commence an acquaintance with fresh-water Algæ. These, as they were brought home, were washed. After selecting some specimens for drying, the rest were placed in soup- or dinner-plates (being in lodgings, I had no choice of vessels) for the purpose of examination and observation.

With the weeds I frequently brought home, for the pure pleasure of looking at them, some of our beautiful spring flowers. And here the want of the conveniences which I should have had at home, led to the discovery which I have now to mention. To preserve the flowers as long as I could, I put them into the same plates as the Algæ, taking care to immerse the ends of the stalks, and to keep them disentangled from the weeds.

The drooping flowers soon began to revive, and in a short time regained their freshness and crispness, which they retained perfectly until the petals had attained their full development, and dropped off one by one, the stem and leaves remaining quite fresh. I have thus kept the Wood Anemone and other spring

flowers for nearly a fortnight without changing the water, which continued bright and sparkling, studded with the air-bubbles thrown off by the Algæ. The quantity of gases thus exhaled by the water-weeds supplied the nourishment required by the gathered flowers, which inhaled them with avidity, and flourished with every appearance of native vigour.

Nor does it appear to signify what kinds of Algæ are selected for this purpose. My plates, for want of space, contained tufts or fleeces of *Lyngbya muralis*, *Vaucheria dichotoma* and *cæspitosa*, *Zygnema* of various species, *Ulva bulbosa* and *crispa*, *Cladophora fracta* and *glomerata*, besides several *innominata*. The *Batrachospermæ*, of which I had several species, and *Draparnaldia plumosa*, are too fragile to risk entanglement with the stems of the flowering plants. The only essential condition seemed to be that the Algæ should be exposed to the light and influence of the sun, so as to stimulate them to the production of the air-bubbles, which purified the water while they nourished the gathered flowers.

I believe that in proper vessels (which the ingenuity of the botanist will suggest) gathered flowers and slips of plants might be thus kept in health for a long time without once changing the water. Among the Algæ there is sure to be found a sufficiency of animal life to maintain the necessary balance. After the weeds have been some little time in the water, many curious and beautiful annelids and water insects will be observed in full activity. In one of my plates is a beautiful little spider, about the size of the head of a pin, of a most brilliant scarlet above and black beneath, whose rapid movements I am never tired of observing.

If more animal life than that furnished by the weeds be considered necessary, the pretty little molluscs *Succinea putris* and *Ancylus fluviatilis* will be found useful, as, though active in the water, they make no attempts to leave it. This cannot be said of the *Limneadæ* (fresh-water snails), which, from their rambling propensities, are a perpetual trouble: every now and then they may be heard to fall from the table, and, like the land snails, may be traced by the shining track they leave behind them. But for this propensity of wandering, the presence of these interesting little creatures would decidedly add to the pleasure of the lover of Nature, by the opportunity thus afforded of studying their habits.

Before I lay down my pen, I must add a few words as to the collection of fresh-water Algæ for the purpose I have mentioned. They may be obtained from the first pond or ditch containing water, running or stagnant. The Algæ are Nature's purifiers, and will be sweet enough when washed, how foul soever may be the water on which they float. A stick with a crook will collect many kinds of Algæ, but others, which consist of disjointed filaments,* or are too lubricous to hang round the crook, may be dipped out with a cup, a tin canister, or a muslin net. The water may be squeezed out, and the weeds wrapped up, if more convenient, in rag or paper. They will revive in the water, even if quite dry: indeed, this property of reviving after being dried up is one of their attributes, otherwise many species would perish during the droughts of summer or the frosts of winter.

2, Dorset Gardens, Brighton.

LASTREA REMOTA.

By FREDERIC CLOWES.

The Fern which Mr. Moore considers identical with *Lastrea remota* (*Aspidium remotum* of Braun), has been cultivated by me for several years. I have therefore had abundant opportunity of observing its peculiarities, and a few remarks on it may be interesting to your readers. It was found at Windermere about six years ago. Mr. Isaac Huddart first observed it, and we both thought it most like a fine specimen of *Lastrea cristata*, var. *spinulosa*. After it had grown a year or two in my garden, I found the caudex was *erect*, not *creeping*, as in *spinulosa*, and year by year it became more and more like *L. Filix-mas*. I showed it to several good botanists, but they paid no attention to it. Last autumn I sent it to Mr. Moore, who told me he had no doubt that it was identical with *L. remota*. The plant was found growing with *L. Filix-mas*, var. *incisa* and *abbreviata*, *L. spinulosa* and *L. dilatata*, about five miles from limestone rocks, where *L. rigida* is abundant. With all these it has some characters in common, but from all it differs. The resemblances and differences are best seen in a tabular form, as follow. A few plants only were found,

* The green scum, full of air-bubbles, often seen on the surface of water, consists entirely of Algæ, frequently of various species.

and although careful search has since been made, no more have been discovered.

	<i>L. remota.</i>	<i>L. Filix-mas</i> , var. <i>incisa.</i>	<i>L. Filix-mas</i> , var. <i>abbreviata.</i>	<i>L. spinulosa.</i>	<i>L. rigida.</i>
Caudex.	Erect.	Erect or decumbent.	Erect or decumbent.	Creeping.	Decumbent.
Vernation.	Forms side-loops, like <i>spinulosa</i> ; tip not so disengaged as to form the shepherd's crook.	Forms no loops, tips disengaged so as to form shepherd's crook.	Forms no loops; shepherd's crook imperfectly formed.	As in <i>L. remota</i> .	No loops nor shepherd's crook.
Pinnules.	More or less distant, pyramidal, acute, shortly stalked below, more or less adnate upwards; the larger ones deeply pinnatifid; serratures of lobes mucronulate or mucronate.	A few rather distant, basal ones with a narrow attachment; some acute, but not mucronate.	Often with a narrow attachment, and rather distant, concave lobes with blunt teeth.	As in <i>remota</i> , but more deeply divided, and more decidedly mucronate, and often spinulose.	More or less distant, and stalked, obtuse, deeply pinnatifid; teeth of lobes often acute, but not mucronate, glandular.
Pinnæ.	Lower ones obliquely triangular from greater length of posterior basal pinnules, the surface more or less twisted upwards.	Linear, triangular, equal-sided, surface on the same plane as that of the frond.	As in <i>Filix-mas</i> , var. <i>incisa</i> , but the pinnules often more distant, concave.	As in <i>L. remota</i> , but more obliquely triangular, and twisted upwards.	As in <i>Filix-mas</i> , but more divided and glandular.
Scales.	Numerous and various, some broad ovate, pale brown, acute; others lanceolate, with a dark blotch at base; others small, awl-shaped indistinctly dark-centred; others ovate, and petately attached, with a long acuminate point.	Numerous, lanceolate, broad and narrow, some with a dark brown blotch at base.	Numerous, jagged, lanceolate, many with a dark brown blotch at base.	Not numerous, broad ovate, acute, pale brown.	Numerous, reddish brown, lanceolate.
Indusia.	Large, convex.	Rather large and convex.	Large, convex.	Small, flat, scarcely covering sori.	Large, convex, glandular.

The general appearance of the frond of a young plant is like that of *spinulosa*, both as to form and texture, and the *vernation* is quite similar. A well-grown frond of an old plant is much more like *L. Filix-mas*. It appears to be exactly intermediate between the two species above mentioned. With a creeping caudex, and somewhat different scales, it would be called *spinulosa*. With a different vernation, pinnules, etc., it would be identified with *Filix-mas*. It obviously differs much from the var. *uliginosa* (with which Mr. Lloyd, who, I believe, has not seen my plant, seems to confound it), in not having the three different kinds of fronds of that Fern, nor the creeping caudex. A few of the smaller scales are like the dark-centred one of *L. dilatata*; others are like the pale, ovate ones of *spinulosa*. As this Fern appears to connect the two forms *spinulosa* and *Filix-mas*, var. *incisa*, we have now, it would seem, a continuous series from typical *F. Filix-mas* to *L. dilatata*, as the latter and *spinulosa* are apparently united by *glandulosa*.

I may remark that *glandulosa* grows plentifully in some situations in this neighbourhood, in close proximity to *spinulosa* and two forms of *dilatata*, both of which are profusely covered with stalked glands, quite as much so as *glandulosa* itself. I have moreover plants from the same place, exactly like *glandulosa*, but *without glands*. The glands therefore are not a character diagnostic of *glandulosa*. The scales, however, of this variety, and the form of frond, etc., are quite intermediate between *spinulosa* and *dilatata*. The caudex of my *glandulosa*, and of one form of *dilatata* (called by Mr. Moore *tenera*) is nearly, if not quite, as creeping as that of *spinulosa*. The plant called *L. dilatata*, var. *glandulosa*, seems therefore exactly intermediate between the glandular forms of *L. dilatata* and the constantly non-glandular *L. cristata*, var. *spinulosa* (Moore).

Windermere, July 15, 1860.

PLANTS IN FLOWER AROUND WHITBY, MAY, 1860.

By T. W. GISSING.

As it is, no doubt, interesting to all botanists and lovers of flowers to notice the time of flowering of plants in different loca-

lities, I send you a list of plants in flower in the neighbourhood of Whitby, in Yorkshire, at the end of May.

Osmunda regalis, that formerly grew luxuriantly at Thomason Foss, a few miles from Whitby, has been completely eradicated through the rapacity of cultivators of Ferns, who have come from a distance, and carried it away to make a few shillings of the miserable plants they rear from the roots. This inconsiderate greediness seems extending, and is likely to exterminate some of our rarest plants. Through it the *Polystichum Lonchitis* is almost lost in the vicinity of Settle.

I only attach the localities to the less common plants; and, of course, many had gone out of flower, and are not named.

- | | |
|---|--|
| <i>Anemone nemorosa</i> . | <i>Stellaria media</i> . |
| <i>Ranunculus aquatilis</i> . | <i>Stellaria Holostea</i> . |
| <i>Ranunculus Ficaria</i> . | <i>Stellaria neglecta</i> . |
| <i>Ranunculus auricomus</i> . | <i>Geranium Robertianum</i> . |
| <i>Ranunculus acris</i> . | <i>Oxalis Acetosella</i> . |
| <i>Ranunculus bulbosus</i> . | <i>Spartium scoparium</i> . |
| <i>Caltha palustris</i> . | <i>Ulex europæus</i> . |
| <i>Trollius europæus</i> . Sparingly at
Beck Hole. | <i>Anthyllis Vulneraria</i> . West Cliff. |
| <i>Corydalis lutea</i> . Near gardens. | <i>Trifolium pratense</i> . |
| <i>Fumaria capreolata</i> . Very fine. | <i>Trifolium minus</i> . |
| <i>Coronopus Ruellii</i> . Sandsend. | <i>Lotus corniculatus</i> . |
| <i>Lepidium campestre</i> . | <i>Vicia sativa</i> . |
| <i>Cochlearia officinalis</i> . Exceedingly
fine, some plants thirty inches
high. | <i>Vicia angustifolia</i> . |
| <i>Armoracia rusticana</i> . Ruswarp. | <i>Orobis tuberosus</i> . |
| <i>Cardamine amara</i> . Cockmill Woods. | <i>Prunus spinosa</i> . |
| <i>Cardamine pratensis</i> . | <i>Prunus Padus</i> . Abundant in Pick-
ering Valley, from Pickering to
Beck Hole. |
| <i>Cardamine hirsuta</i> . | <i>Geum rivale</i> . Cockmill Wood. |
| <i>Barbarea vulgaris</i> . | <i>Potentilla anserina</i> . |
| <i>Cheiranthus Cheiri</i> . Abbey walls. | <i>Potentilla Tormentilla</i> . |
| <i>Viola canina</i> . | <i>Fragaria vesca</i> . |
| <i>Polygala vulgaris</i> . | <i>Sanguisorba officinalis</i> . |
| <i>Lychnis diurna</i> . | <i>Poterium Sanguisorba</i> . |
| <i>Lychnis vespertina</i> . | <i>Alchemilla vulgaris</i> . |
| <i>Sagina procumbens</i> . | <i>Cratægus Oxyacantha</i> . |
| <i>Honckenya peploides</i> . Sandsend. | <i>Pyrus Malus</i> . Cockmill Wood. |
| <i>Arenaria trinervis</i> . | <i>Ribes rubrum</i> . Cockmill Wood. |
| | <i>Saxifraga granulata</i> . Cockmill Wd. |

- Chrysosplenium oppositifolium*.
Sanicula europæa.
Bunium flexuosum.
Heracleum Sphondylium.
Myrrhis odorata. Banks of the
 Esk.
Galium cruciatum.
Asperula odorata. Cockmill and
 Larpool Woods.
Valeriana dioica.
Chrysanthemum leucanthemum.
Vaccinium Myrtillus. Cockmill Wd.
Ilex Aquifolium.
Veronica serpyllifolia.
Veronica montana.
Veronica Chamædrys.
Melampyrum pratense.
Pedicularis sylvatica.
Ajuga reptans.
Lamium Galeobdolon.
Lamium album.
Lamium purpureum.
Glechoma hederacea.
Myosotis sylvatica.
Primula vulgaris.
Primula veris.
Hottonia palustris. Pickering Vale.
Plantago maritima. Saltwich.
Hippophae rhamnoides. One spot
 only, Upgang Cliff, and here there
 is some fear that it may be up-
 rooted, as persons destroy it on
 account of the sheep. Why not
 burn all the *Furze* on the cliff?
Quercus Robur.
Orchis Morio. Very abundant.
Orchis mascula.
Hyacinthus nonscriptus.
Arum maculatum.
Luzula sylvatica.
Luzula pilosa.
Luzula campestris.
Eriophorum angustifolium. Between
 Upgang and Sandsend.
Carex pendula. Cockmill Wood.
Carex præcox.
Carex glauca.
Melica uniflora.
Briza media.
Polypodium vulgare.
Polystichum aculeatum. Cockmill
 Wood.
Polystichum angulare. Cockmill Wd.
Lastrea Oreopteris. Cockmill Wood.
Lastrea dilatata. Cockmill Wood.
Athyrium Filix-femina.
Scolopendrium vulgare.
Blechnum boreale.
Equisetum Telmateia. Cockmill Wd.
Equisetum arvense. Cockmill Wood.
Equisetum sylvaticum.
Equisetum palustre.

It is somewhat remarkable that the Hawthorn should be in flower so early after so severe a winter, extending through the spring months. It is seldom *generally* in flower here before the middle of June; but here, and as far north as Whitby, hedges were white at the end of May.

Wakefield, June 2, 1860.

NEW LOCALITY FOR MAIANTHEMUM BIFOLIUM.

To the Editor of the 'Phytologist.'

Sir,—I beg leave to forward a specimen of *Maianthemum bifolium*, which was growing rather in abundance a little beyond the northerly end of Forge Valley, near Scarborough. It was found by Mr. Braby, supervisor of her Majesty's Inland Revenue, and myself. The place of its growth is bordering on the Moors, and to all appearance this would stamp it as an indigenous plant. It was growing in company with *Trientalis europæa*, on a northerly aspect. It is not given in any lists of plants growing in this locality. The leaves were noticed last year by us at a period too late for the flower. I shall be happy to give you any further information respecting it, should you require it.

The *Actæa spicata* grows in the same wood as the *Maianthemum bifolium*, although they are at least half a mile apart. The *Actæa* grows in a much more shaded part of the wood than the *Maianthemum*, among the loose rubble of the oolite. Its local habitat is not a new one, for it appears in the Scarborough list, viz. Forge Valley.

We found the *Maianthemum* growing in peat earth on the brow of a very steep bank, with a northerly aspect. The trees under which it was growing are badly-grown Oak and Ash, with large patches of bramble-bushes scattered about. Not far from the spot grow *Pyrola minor*, *Habenaria chlorantha*, *Lastrea montana*, *Polypodium Phegopteris*, and many other rare plants.

Ayton, York, July 18, 1860.

FREDERICK REYNOLDS.

Note.—The specimen of *M. bifolium* was duly received, and thanks are hereby tendered to the obliging sender. It is one of the most interesting additions made to the list of localities for the rarer species of our Flora in recent years. It is now many years since it was observed by the writer, in the woods of Kenwood Park. In 'Cybele Britannica' it is entered as "alien or unknown as a British plant." It may be alien; possibly one-third of our plants are so, but it certainly is not unknown as a "British plant." I observed it in the place above stated, more than thirty years ago; and the gardener, a very intelligent man, informed me that it was no "new discovery," for that it had been known in that wood, in two spots, above fifty years. Its introduction was unknown. The lower patch had disappeared several years ago, and its disappearance was attributed to the alteration of a walk in the wood. The higher patch had considerably increased in

1852; the plant covered double the area it occupied in 1829. In 1852 this same patch of plants was observed by H. L. de La Chaumette in the same station, and the supposed discovery communicated to the 'Phytologist.' See vol. iv. pp. 519, 520, o.s. In vol. i., same series, it appears at p. 520 as a discovery made at Howick, Northumberland, by the members of the Berwickshire Naturalists' Club, in 1842.

In Park's History of Hampstead, this pretty plant and interesting addition to the British Flora is mentioned, or rather recorded, among the wild plants of this district. In 1843, Mr. Edward Edwards, of Bexley, Kent, published his observations and remarks on the Hampstead locality of this plant; and the same author says, "A year or two before this time (1843), I observed it under Fir-trees, in Apsley Wood, Bedfordshire, which is but a short walk from the town of Woburn."*

It appears that this plant is far from being new to the British Flora. See Johnson's Gerard, p. 409. Our old herbalist states that "it is found in Lancashire, in Dingley Wood, six miles from Preston in Auldirnesse, and in Harwood, near Blackburn, likewise. It floureth in May, and the fruit is ripe in September."

Parkinson states that "it groweth in moist, shadowie, and grassie places of woods in many places of the realme."

This plant was known to Lobel (see his *Observationes et Adversaria*, 161, 127, respectively). Loudon was probably mistaken in giving 1596 as the date of its introduction into Britain. Whether the plant be alien or native, it is not unknown as a spontaneous British species, for it has been described by many botanists since the middle of the sixteenth century, and has been seen and recorded by many living observers of our wild plants.

ISATIS TINCTORIA.

On the Discovery of Isatis tinctoria at New Wandsworth Station.

By JOHN LLOYD.

About the middle of last month (June, 1860) I had the pleasure of discovering a new locality for this very rare British plant, and which I have the honour of announcing to the readers of the 'Phytologist,' and through them to the botanists of Great Britain.

Two stations for this uncommon plant have recently appeared in the periodical just mentioned—not recent discoveries, as this

* Both these observers state that the plant grows under Fir-trees in Ken Wood; but this is not quite correct. There are Fir-trees at no great distance from the patch of *Maianthemum*, but the plants are not under them.

is, but merely fresh announcements of what had been known, or might have been known, for hundreds, perhaps thousands, of years. The locality above given is new in every respect.

The two old stations lately published, though long well known, are, the one between Guildford and Shalford, on the *débris* and about the steep lofty sides of the chalk-quarries and also in the adjoining fields, and the other is not far from Tewkesbury, in Gloucestershire. Neither of these two localities is temporary. In the Guildford locality the plant is so conspicuous and plentiful, that, buttercup-like, "it will be seen, whether you will or no."

At Wandsworth this plant, the celebrated *Woad* of the ancient Britons, an economical species used by our forefathers, in the arts, centuries before this island was invaded and conquered by the Romans, grows on both banks of the West End of London and Crystal Palace railway, a little above the junction of the London and South-western railway with that to the Crystal Palace, or on the eastern side of the latter, between the station called New Wandsworth station and the bridge for foot-passengers which unites the banks of both railways, affording a passage across both lines.

This day, the 28th June, 1860, I visited the place a second time. I first observed it on the 15th of the present month (June), when there were numerous large and very conspicuous bushy specimens on both sides of the cutting, which at this part is very deep—probably between twenty and thirty feet. Today (the 28th), these steep banks having been mowed, the plants, alas! were all prostrate; not one single stem remained, like "the last rose of summer," to mourn the fate of her interesting, if not lovely, companions, all withered, but not gone. The scythe of the ruthless mower had not spared a single stalk.

Several young plants appeared, and one or two were carried off and planted in my garden.

It is not easy to destroy this plant where it has once got a footing, and it often secures its position far beyond the reach of the most venturous and rapacious plant-seeker. The late Mr. Salmon, for a good-natured freak, took a plant from Guildford and placed it within reach on a ledge of one of the chalk-quarries at Compton. This good man—"peace to his manes!"—became afterwards conscience-stricken, and fearful of being the unintentional misleader of some innocent member of the fraternity, took

great pains to undo his meritorious work of increasing the stations of rare British plants. This was, however, impracticable. The plant had selected for itself a spot where, happily, it was beyond the reach of the most resolute human exterminator.

It is well established at Wandsworth, but not in an inaccessible locality. It can be easily reached. Let not the Metropolitan botanists avail themselves of its unprotected situation. They are entreated to spare it for the sake of posterity.

In modern times, the questions in reference to the immigration of species into certain parts of the country where they had not previously been seen, and, as in the present case, could not have been, are too often discussed with more acrimony than positive results. They are among the most fruitless of all unfruitful controversies. The question itself, viz. *Whence and how* came the *Isatis tinctoria* to its present new abode? is not an improper nor a foolish question. The answers unhappily contribute more to increase our chagrin than our knowledge. Guildford is twenty-five miles from Wandsworth; Tewkesbury is a hundred; therefore, as a logician or a mathematician would say, it is more probable that the *Isatis* now at Wandsworth came originally from Guildford than from Tewkesbury. It must, however, be admitted that there is no reliable evidence to support the assumption that it came either from the one place or from the other. It might have reached Wandsworth from some quarter far more remote from its new station than either of the above-quoted English localities. It is easy to guess whence it came, but it is impossible, under present circumstances, to give any positive information about its original locality.

I have seen straggling plants of the *Isatis* on the towing-path of the navigable Wey, below Woodbridge, probably miles from the chalk-quarries where the plant grows. These stragglers may reasonably be assumed to have been conveyed in the lime or in the horse-provender of the bargemen. In modern times, however, hypercritical and even sceptical habits are so prevalent, that if the assumption in the present case were hazarded that the Woad at Wandsworth migrated from the large colony at Guildford, it would certainly be met by the objection that the chalk is burned before it is transported, and that the intense heat necessary for its conversion into lime would certainly destroy the vitality of either seeds or roots.

Nobody can deny that there is much force in this objection, though it is certain that the plant was conveyed from some place and by some agency. Let the botanical geographers settle this question among themselves. There are certain plants which evince a partiality for railway cuttings, and *Enothera biennis*, *Melilotus officinalis*, *M. vulgaris*, and several *Cruciferae*, may be cited in proof of this fact, but *Isatis tinctoria* has not hitherto been convicted of these vagabondizing tendencies and troublesome partialities for embankments.

But Wandsworth Common offers other examples of hard nuts to be cracked by philosophical and geographical botanists. Whence came *Lycopodium inundatum*, *Drosera rotundifolia*, and *Osmunda regalis* into their present stations at the bottom and on the sides of a deep cutting opposite the New Surrey Jail? It may be said, from the bog on Wimbledon Common, behind the mill. Who brought them? The gravel or ballast was taken from the place where these plants now grow and carried beyond the place where the plants may be assumed to have come from. The soil was not taken from Wimbledon, as the lime may have been taken from Guildford, and used here as mortar, but it was taken from Wandsworth Common,—where none of these plants were ever seen prior to the railway cutting,—and carried to the valley or basin of the Wandle, beyond Wimbledon Common. Were the minute seeds or spores of these non-migratory or non-cosmopolitan plants conveyed to their present place of growth from Wimbledon Common or from any other place by underground tiny currents, rills, or watery percolations, or by atmospheric currents, or by winds, storms, or by attachment to the hairy or feathery integuments of beasts or birds; or were the plants eaten by animals, and the undigested seeds, etc., dropped in the cutting exactly where they found a suitable locality; or reached they their present abode from or through or by the agency of man or by any of his modern multifarious operations, which have of late very much deranged the laws which philosophic botanists have made and provided for the regulation of the Vegetable Kingdom? The usual answers to these and similar interrogatories add much more to our speculative than to our real knowledge of the geographical relations of plants.

CYNOGLOSSUM SYLVATICUM.

On the Biennial Duration of Cynoglossum sylvaticum,

By JOHN SIM.

Cynoglossum sylvaticum, Hænke, is only of modern origin as a species, for until a recent period it was treated as a mere variety of its more common and more widely distributed relation, *C. officinale*. Besides its now commonly received name as above, it is known by several others, even in modern works, viz. *C. montanum*, Lamarck; *C. virginicum*, Gmelin; *C. apenninum*, Roth; *C. virens*, Schreber; *C. germanicum*, Jacquin.

In Ray (see Dillenius's edition) it is named *Cynoglossa folio virente*, the green-leaved variety of *C. officinale*, and *C. media altera, virente folio, rubro flore, montana frigidarum regionum*, (Columna, Ecphrasis, ed. Romæ, 1616.)

The history of the species is sufficiently plain and satisfactory; but some of its other accidents are rather obscure and conflictive, especially its duration and its distribution in Britain.

In all our recent works on the British plants, *C. sylvaticum* is stated to be of biennial duration. Hull is the only exception.* Several English botanists of the eighteenth century have described it erroneously in one respect, viz. calling it a *biennial*.

The celebrated Dr. Withering, remarkable for his general accuracy, describes (edit. 1796) *C. officinale* as a perennial, and *C. sylvaticum* as a biennial. Mr. Wm. Hudson, who may be justly named the father of modern British systematic botanists, in his first edition of the British Flora describes our plant as the var. *virens* of *C. officinale*, and correctly states its duration as perennial. It is true that he describes its principal, *C. officinale*, as a biennial. But there are several instances among higher animated beings, of children that have lived much longer than their parents. Sir J. E. Smith implicitly follows his learned predecessor Withering, and the largest part of the humbler historians, chroniclers, and describers of British vegetation, has, with praiseworthy fidelity and docility, followed these two *magni coryphæi* (great luminaries) of British botany.

But the great leaders were not universally nor implicitly fol-

* He is not a recent authority, but a second edition of his Flora was published in 1808.

lowed. Hull, as above stated, correctly describes *C. sylvaticum* as a perennial; and among the local botanists, Dr. Sibthorp and the reverend author of 'Flora Bedfordiensis' deserve the praise of having recorded the result of their own experience, as well as the observations, opinions, and facts published by others. But these two learned and reverend botanists do not exactly coincide in their statements about these plants. The Oxford professor, and originator of the famous 'Flora Græca,' one of the most sumptuous of botanical works, states that *C. sylvaticum* is perennial, and that *C. officinale* is biennial. All the ancient botanists, from Gerard and Parkinson to the illustrious Ray, describe both forms as of equal duration. Hudson, who first systematically employed signs to indicate duration, enters the sign of a perennial after his description of the var. β , or *virens*, our *C. sylvaticum*, whence it may be inferred that his opinion was that they were both perennials.

It may be stated as a fact that till now, with the single exception of Hull, the biennial duration of *C. sylvaticum* has been unquestioned during the last sixty years.

These historical and introductory notices of the diversities of opinion about the duration of *C. sylvaticum*, will prepare the reader for the following statement. I most unhesitatingly assert that the duration of *C. sylvaticum* is longer than biennial; and I am as positive in maintaining this, as I am in affirming another disputed fact, namely, that it is a true native of Scotland. I now offer the following as evidence of the verity of what I have above stated.

First, as "seeing is believing," or, in plainer terms, because few are disposed to place quite as much reliance on another's observations as on their own, I sent some examples of this species to the editor of the 'Phytologist' sometime during last May, probably about the end of the month. These specimens consisted of the roots and the flowering stems of last summer (1859); and near the base of the dead stems of the previous year, vigorous shoots, several inches long, which would have produced flowering stems for this year, were well developed. If this be not the mark of a perennial species, I would humbly beg to ask, what is the distinction between biennial and perennial duration?

How could this error have arisen?—for a mistake it most undoubtedly is. It is easy to conjecture how the error has spread,

and also taken deep root in most quarters, even among the most critical and best informed modern botanists.

This species for many years was regarded as only a variety of *C. officinale*, and the same duration was assigned to the one as has been perhaps rashly assumed as that of the other. The venerable botanists of the sixteenth and seventeenth centuries usually describe only cultivated plants, and some may have lost even perennials after flowering only once, while some might have succeeded in preserving them in their collections for a longer period. This is a probable cause why both species of *Cynoglossum* were described as biennial by some and as perennial by others. When it was judged fit to detach the younger species from the elder, the former very naturally was expected to conform to the natural laws of the latter, or that the daughter would be of the same character, if not exactly of the same size and complexion, as the mother. Hence it may be inferred, without any considerable breach of the laws of charity, that Hudson concluded that the one, namely, var. *virens*, would live as long as the other, viz. the original *C. officinale*, or that both were of indefinite, or, as it is usually stated, of perennial, duration.

The mistake can be traced to Dr. Withering; for Hudson is right about the longevity of *C. sylvaticum*, though there is no positive evidence to establish the perennial duration of *C. officinale*. If this had been stated by a meaner authority than Dr. Withering, the statement would not have been so implicitly followed. It is human to err; but only the celebrated and great propagators of error get their errors indorsed or credited by shoals of *goube-mouches*, who readily assent to the *dicta* of some great master spirit.

It is neither extraordinary nor unaccountable that this mistake about the durability of *C. sylvaticum* should have crept into our books about British plants, and should have so long passed current and unchallenged as an indefeasible and incontrovertible fact, but that there should be any question about the nativity of the plant in the Carse of Gowrie is one of the most absurd of all imaginable absurd hallucinations. Is this fact—for fact it is, in spite of all that botanical geographers maintain—rejected because it appears in Hooker's 'Flora Scotica' with the authority of George Don appended? There are some who sneer at the bare mention of the name. But granted that some plants reported by this keen and

laborious botanist have not been seen where he said or wrote that they were *once* seen, is the testimony of living witnesses to the fact to be repudiated?

Anybody might be mistaken about the duration of the plant, but nobody could be mistaken about the other question, viz. its spontaneous or native growth; for I assert that in this instance these terms are synonymous in this neighbourhood.

It is quite possible, it is even probable, that no one of the authors or compilers of our very recent Floras ever collected *C. sylvaticum* near Perth, or possesses in his herbarium a specimen from that locality. But would it be just, from this assumed fact, to infer that *C. sylvaticum* does not exist in Scotland? Is the testimony of Sir W. J. Hooker, who admits it, unquestioned, among the Scottish plants enumerated, described, and localized in his 'Flora of Scotland' of no weight? A learned professor, with a formidable *tail* of amateur and pupil botanists, may make a *raid* into even a rich locality, and neither carry off all the spoil nor even detect all the botanical rarities. Surely this will not be disputed. Every botanist is not expected to see every plant in every station where it has been seen by some local observer. A single pair of eyes and a single pair of legs, however well trained and athletic, are not expected to accomplish this feat. Our knowledge of things would be very scanty, if limited by the results of our own experience and observation.

In the most recent work on the British plants, the existence of *C. sylvaticum* as a production of Scotland is unceremoniously denied—not because its non-existence there was the result of the experience of the learned author of this useful work, but because it has of late been fashionable to decry the discoveries of the late George Don. The author of this much-belauded handbook, in which the plants are traced not only through the isle of Britain, but also all over the continents of Europe, America, etc., knows more about the distribution of our native plants abroad than at home. There are men of deep insight into the affairs of others who do not know what is doing about their own firesides. This author can learnedly state the range of the British species throughout the world, knows their appearances, associations, and economy on the hills and in the vales of Scandinavia and Helvetia, and is at the same time unacquainted with their geography and statistics within the bounds of the United Kingdom, in that small

portion of the world wherein both he and the subjects of his comprehensive descriptions dwell.

It would be very unjust to the compilers of our modern British Floras to begrudge them their hard-earned meed of praise for giving us such enlarged and correct notions about plants, their distinctions, geographical and geognostic relations, etc., but they need not be so offensively dogmatical and positive about the range and nativity of species as they are. Instead of offering themselves as expounders and interpreters of Nature,—the true office of naturalists,—some audaciously presume to lay down principles of classification, description, etc., so outrageous and so utterly subversive of the results of history and observation, that natural science is in danger of becoming a subject for the gibes and scorn of small witlings and malevolent sneerers.

Within the last few years plants have been discovered in the vicinity of Perth which have grown there for hundreds, probably for thousands, of years, but which were never observed, or at all events they were not recorded, till very recently. *Linnaea borealis*, *Sedum album*, and *S. dasyphyllum*, are quoted from the 'Phytologist' as examples.

In conclusion, the following hint or counsel is deferentially offered to all the possessors of British Floras. They should prize these productions; they cost their authors much thought and labour, and they are very useful to those who know how to use them; they are only intended as helps, not as authorities from whose judgment there is no appeal. Implicit reliance is not to be placed on them, for although it must be admitted that their authors did the best they could, still they are fallible. Great botanists, as well as other great men, are liable to the frailties which beset all alike; they cannot claim complete exemption from the common lot of humanity.

Note.—A specimen, perhaps two, of *C. sylvaticum* arrived here from Mr. Sim, and there can be no doubt about these individuals: they were not *biennial*, but *perennial*. It is believed that they have both ceased to exist as living plants, or indeed as plants in any state. They did not recover their long journey of 480 miles, and the slugs took a liking to their half-dead leaves, and they are now dead and gone. The plant sent to Chelsea is or was certainly perennial. There can be no mistake about this point. It may be granted also that the colony of plants from among

which these examples were sent is composed of perennial and not of biennial plants.

The following question is urgently pressed on such readers of the 'Phytologist' as are well acquainted with the nature of these plants, and this is especially addressed to the botanists of Surrey, Essex, Worcestershire, Oxfordshire, Devonshire, etc., where this plant grows,—Is *Cynoglossum sylvaticum*, Hænke, a biennial or a perennial? Again,—Is *C. officinale* of biennial or perennial duration? These queries are not submitted with the covert intention of throwing the slightest shade of suspicion on Mr. Sim's statement. We believe that there is not a more earnest truth-seeker and truth-lover than our estimable correspondent, yet as the opinions of celebrated authors are diverse, caution is surely excusable. Our readers are requested not to prejudge the matter, but to wait till more evidence has been adduced either in confirmation of the above or otherwise.

It is well known that accidents may retard the full development of any plant, even after the stem has reached a considerable height. In such a case the base of the stem or the crown of the root might produce a shoot when the plant was three or even four years old. I have often observed this in the garden *Angelica*. Sometimes it flowers the second year of its existence; sometimes its flowering is retarded till its third year; and in rare cases it has been known to survive till its fourth year. The Evening Primrose is also strictly a biennial, but its roots do sometimes push out a late shoot, which may, under favourable circumstances, flower in the third year of the life of the plant.

It is also well known that the Scented Mignonette may, by pinching off its flowers, be preserved in a growing state indefinitely. It is said that it becomes shrubby in the north of Africa. The Castor-oil plant, which is an annual with us, becomes in the south of Europe a tree of considerable altitude.

It is not probable that the *C. sylvaticum* which grows on the hill of Kinnoul is of any longer or shorter duration than the plants of the same species which grow in England. They are all alike, either biennial or perennial. But more information is wanted to help us to form a satisfactory opinion on this questionable point.

PLANTS NOTICED BY EARLY WRITERS.

Saint Plants, etc.

In Sir Thomas Overbury's character of a good wife, she is her husband's absent hands, eyes, ears, and mouth, his present and absent all. "She frames her nature unto his howsoever. The

Hiacinth follows not the sun more willingly. Stubbornesse and obstinacy are herbs that grow not in her garden."

Amongst *Saint Plants* I find the following :—

St. Barbara's herb : Winter Cresses.

St. James's wort : Ragwort, Staggerwort, Staverwort.

St. John's herb : Thin-leaved Mugwort, Clary.

St. Innocent's herb : Knotgrass, Bird's-tongue, Swine's-grass, Centinody.

St. Mary's herb : Our Lady's Mint, Spearmint, Cost Mary, Ale-cost, Boy's-bread.

St. Peter's herb : Samphire, Crest-marin.

Herb-Robert : Cranesbill.

St. Roche's herb : Coniza, Fleabane.

St. Simon's herb : Simon's Mallow, Vervain Mallow.

St. John's wort : Hypericum, Tutsan, Parkleaves.

St. John's herb : Mugwort, or Clary, is, I doubt not, "Herb John-in-the-pot," spoken of by Gurnall in his 'Christian Armour,' about which a question was asked in the 'Phytologist' some months since.

The "Hiacinth" alluded to by Sir Thomas Overbury appears to possess a habit which I was not aware of, that of following the sun. Is this so, or does he allude to some other plant? If so, what?

S. B.

THE PLANTS OF THE EARLY POETS.

(Weeds and venemous plants)

"Brought forth by the earth,
Mocking our hopes, turning our seed-wheat kernel
To burn-grain Thistle, and to vapourie Darnel,
Cockle, Wild Oats, rough Burs, corn-cumbring Tares,
Short recompense for all our costly cares.
Yet this were little, if the more malicious
Fell stepdame brought us plants not more pernicious,
As sable *Henbane* ; *Morell*, making mad ;
Cold poysoning *Poppy*, itching, drowsy, sad ;
The stifning *Carpese* ; th' eyes-foe Hemlock, stinking,
Limb-numming, belching ; and the sinew-shrinking,
Dead-laughing Apium, weeping Aconite
(Which in our vulgar Deadly Wolfsbane hight) ;
The dropsy-breeding, sorrow-bringing Psylly
(*Hear* call'd Fleawurt), Colchis baneful Lily

(With us Wild Saffron), blistring, byting, fell ;
 Hot *Napell*, making lips and tongue to swell ;
 Blood-boyling Yew, and costive Misseltoe,
 With ice-cold *Mandrake* and a many mo
 Such fatal plants, whose fruit, seed, sap, or root
 T' untimely grave doe bring our heedless foot."

In a late number of the 'Phytologist' you gave us the benefit of Mr. M. F. Tupper's knowledge of the hidden uses of plants, but nothing has come to light upon the subject. The above lines are taken from J. Sylvester's translation of Du Bartas's 'Divine Weeks,' p. 258; and, in my opinion, the poet of the sixteenth century had a better knowledge of plants than our modern poet Tupper. The sable Henbane I take to be *Hyoscyamus niger*; the *Morell*, the Annual Nightshade (*Solanum nigrum*), called by Cotgrave "*Morelle furieuse ou manique*,—mad, raging, or furious Nightshade." The stiffening Carpease may be the same as Cotgrave gives, viz. "*Carpase*: a certain plant, whose juice being drank, procureth sleep, and in sleeping stranglenth; not mentioned by modern herbarists." The Hemlock I take to be *Conium maculatum*. The *Psyly* I do not know. Does *Napell* mean the *Aconitum Napellus*? and what is meant by *blood-boyling Yew*? With reference to Mandrake, I conclude the *Atropa Mandragora* is meant, as it has properties *cold* in the third degree, as the old writers tell us; and it is also a herb of Saturn, according to the astrological botanists. Is not the White Bryony called, in some parts of England, Mandrake? I think I have heard it so called by the shepherds and carters.

The following is in the second part of Turner's 'Herbal':—"Of Psillium, or Flea-seede, although I have seen this herb often in Germany and in England, yet I never saw it grow wild, but only in gardens; but hitherto I could never learn the English or Dutch name of it. It may be well called Flea-seede or Fleawurt, because the seede is very like unto a flea. It is noticed as having cooling properties; and, according to Arabioness, 'all men must take heed that they take not too much of it, for it will kill a man as well as many other poisons do.' Galen says it is cold in the second degree."

It should be remarked that in the first lines there is mentioned the Cockle and also the Darnel, the latter being probably the *Lolium temulentum*; but I believe the latter was called also Cockle by some of our early writers.

S. B.

Reviews.

A New List of the Flowering Plants and Ferns growing Wild in the County of Devon; with their Habitats and Principal Stations. By THOMAS F. RAVENSHAW, M.A., Rector of Pewsey, Wilts. London: Bosworth and Harrison, 215, Regent-street, 1860.

In the preface to this new Flora of Devon, the reverend author states that it is now more than thirty years since Messrs. Jones and Kingston published the 'Flora Devonensis' (this work appeared in 1829), and during this long period, nearly equal to a generation of "working men," a large number of plants have (has) been added to the floral wealth of England's fairest county, and they have found no permanent record in a collected form. "There is," our author continues, "a very excellent Flora of Sidmouth, and a very indifferent one of Totness; the *rariores* of Plymouth have been recorded in a local magazine, and various papers on Devon plants have appeared in the 'Phytologist.'" A combination of these scattered facts, with the results of the author's observations, and with the contributions of friends to the undertaking, constitutes the present work. The nomenclature and arrangement of Mr. Babington have been adopted; and Mr. T. Moore, the celebrated pteridologist, of Chelsea, contributed to the list of Ferns.

The present work on the plants of Devonshire is a very welcome addition to the literature of English local botany; and there is ample scope for many similar works. The metropolitan counties of Middlesex, Essex, Kent, and Surrey, have as yet had no botanical historian to tell the world what treasures Flora discloses within their respective bounds. Many of our inland, and even maritime shires, are in the same unenviable predicament; their floral beauties are "unsaid and unsung." Some counties, like Devon, Oxford, Cambridge, etc., have two or three or four Floras apiece. Some obscure towns, like Faversham, Reigate, Banbury, and Woodford, possess excellent Floras. The botanical public has, however, reason rather to be thankful for what it has got than to grumble because it has not got more. The local botanist usually gets as little praise as solid pudding for his labour.

Botanists are under heavy obligations to clergymen. Many of

their order have been most devoted votaries of Flora, and several of them have made costly offerings at her shrine. The intelligent reader will recall to mind the honoured names of Ray, Martyn, Relhan, Sibthorp, Abbott, etc. etc., together with the late Dean of Manchester. Etiquette, delicacy, good feeling, and respect, forbid all mention of the merits of living botanists of the sacred or of any other order; but the Index and Contents of the 'Phytologist' during the last five or six years bear ample testimony to the zeal and activity of the clerical members of the fraternity.

The census of the plants of Devon, as recorded in Mr. Ravenshaw's List, shows a great increase during the last thirty years. In Jones and Kingston's Flora the number of species does not amount to 800, with the Ferns. The number in the recently published list is not far short of 1,100, including the Ferns and the Fern allies. The increase in thirty years is consequently nearly 300. In number of species Devonshire is now the richest county in England. Yorkshire, the largest English county, previously had the reputation of possessing the richest comital Flora in the British Isles. It must now yield the palm to its fair Devonshire sister. In Yorkshire the Flowering Plants and Ferns, exclusive of alien species, are about 1,000. This number is exceeded by the number in Devon.

Probably the author of the Devon list has not been so particular in marking the naturalized and doubtful species as the author of the Yorkshire Flora. Probably several of the plants deemed alien in the Yorkshire Flora are properly treated as true natives in that of Devon. There are certain plants of Devonshire which do not reach so far north as Yorkshire, and there are some Yorkshire species which do not reach so far south as Devon; consequently the numerical difference between the plants of the two largest English counties is not very remarkable.

If the plants of Devonshire be compared with those of Aberdeenshire, which is only about as far north of the extreme north of Yorkshire as the middle of the latter is from the south of Devon, the numerical difference is strikingly considerable. The number of species, exclusive of Ferns, common to those two large counties, Aberdeen and Devon, is about 550; or not many more than half of the Flowering Plants of Devon are found in the county of Aberdeen. For example, the *Umbelliferae* of Devon-

shire amount to 45; in Aberdeenshire there are only 22. The *Leguminiferae* in the two counties are 59 and 25 respectively; the *Labiatae*, 41 and 24; *Compositae*, 89 and 50.

The latter county indeed contains a few plants not found in the south of England.

The certainly naturalized plants of Devon, such as *Oenothera biennis*, *Saxifraga umbrosa*, *Lilium Martagon*, *Antirrhinum majus*, *Linaria Cymbalaria*, *L. supina*, etc., are between 30 and 40.*

Those possibly introduced, but apparently native, are few. *Acer Pseudo-Platanus*, *Fragaria elatior*, *Tamarix anglica*, *Ribes Grossularia*, *Petroselinum sativum*, *Anthriscus Cerefolium*, *Ceranthus ruber*, *Tragopogon porrifolius*, *Borago officinalis*, *Anchusa sempervirens*, etc., are examples.

The plants peculiar to Devon are found on Dawlish Warren, Shute Common, near Axminster, etc. These are *Lobelia urens* and *Trichonema Columnæ*. Are there any other plants peculiar to Devonshire?

The list of dubious and bracketed plants is not large. *Delphinium Consolida*, *Lathyrus latifolius*, *Bunium Bulbocastanum*, *Asperula arvensis*, *Diotis maritima*, *Vaccinium Oxycoccus*, *Cicendia filiformis*, *Verbascum Lychnitis*, are the chief examples. A question is put about the last-named plant, for which no recent authority is quoted for its growth in Devonshire, namely,—Is this the true *Lychnitis*, which is said to grow only in Kent and Glamorganshire?

Devonian botanists may give a satisfactory answer to the query about the verity of the species: almost any botanist can certify that *Verbascum Lychnitis* is not exclusively confined to these two counties. It is common in some parts of Kent, and it is not very uncommon in some parts of Herts, *teste* the reverend author of the 'Flora Hertfordiensis,' etc. The writer of this notice saw a plant, no longer ago than last summer (1859), between Hatfield and Brocket Hall.

Mr. Pamplin has also repeatedly reported the species from several parts of Merionethshire, in Wales; and living Welsh botanists report it from Denbighshire.

* The alien plants in the Devon list, according to our author, is not much above one-thirtieth of the entire Flora. The aliens in the Yorkshire list amount to nearly one-ninth of the number of species in the said Flora. The latter authority follows the London Catalogue; the former is supposed to have taken Nature for his guide in determining the genuineness of the species recorded in his list.

The authority of the 'Phytologist' is given for the rediscovery of *Ranunculus gramineus*, a discovery which the 'Phytologist' subsequently disowned. This plant must still be classed among the *dubieties* of Devonshire, if not of Britain. *Pyrus domestica* is also one of the dubious plants, apparently wild in a hedge at Chudleigh. Some captious persons might say this is only *P. Torminalis*, which is often mistaken for the true Service-tree, and which also grows in hedges in the south of England. C. Eyre Parker, Esq., of Torquay, can easily settle this doubtful point.

Hypochaeris maculata is entered as a Devonshire species with the locality of Lynton, without authority. It would be desirable to have some proof of its occurrence there. At present we have only two known stations for this rare species, viz. rocks adjoining Morecombe Bay, near Cartmel, Lancashire, and North Wales, near Orme's Head. It may be a Devon plant; but if so, its horizontal range must be very considerably extended. *Azalea procumbens* is another species which has migrated far, very far, from its usual bounds. Is it like some of the other natives of the northern portion of our isle?—has it a tendency to travel south? If it imitates them in fixity of tenure, it will maintain its place in Devon. Is there any part of Devonshire 1,500 feet higher than the level of the sea? *Equisetum variegatum* is thought by some botanists to attain its austral limits in Yorkshire. It has straggled far from home if it grows plentifully on the face of the cliffs from Salcombe to Branscombe; but the Vegetable, like the Animal Kingdom, has a tendency to shift its quarters as well as enlarge its borders.

Asarum europæum is the last of the dubious plants which can be entered here, a plant which is little known as a native beyond the bounds of Yorkshire. A question may be asked about *Primula elatior*, (p. 53,) viz. Is this the var. *caulescens* of *P. vulgaris* or *P. elatior* of Jacquin? It is not quite satisfactorily identified by the authority quoted after the name. Again, Is *Pulicaris arvensis* (p. 35) a misprint for *P. vulgaris*, Gært.?

The reviewer firmly believes that neither his readers nor the amiable and reverend author of this List will consider these remarks and queries as either trifling, captious, or querulous.

We do not look critically at the "mouth of a gift-horse." All contributions to botanical information receive a cordial welcome and a genial acknowledgment in the 'Phytologist.' This

List of Devon Flowering Plants and Ferns is a very unassuming publication : it is of moderate size, ninety-four crown octavo pages, very correctly printed, with legible bold type, on good paper.

As a guide to the plants of this beautiful county, it is quite satisfactory. The localities and authorities for the *rariores* are numerous, and most of them recent. No botanist who intends to visit this county should go unprovided with this list.

When a second edition is required, the author will probably have the kindness to get a small map engraved, with the chief botanical stations prominently marked. Another desideratum is an index. Though a small book, an index to the Orders and Genera would render it more useful, and references could be more readily made.

British botanists who make the distribution of plants a part of their botanical researches, may profitably avail themselves of Mr. Ravenshaw's labours. To the botanists of Devon it is indispensable ; and it bears all the appearance of a trust-worthy guide to the *planta rariores* of this beautiful county ; and it will doubtless have a good circulation in the southern counties of England.

Dublin Natural History Society. (Reports of, from p. 123 to p. 214.)

A paper by Mr. Andrews, on the specific distinctness of *Hymenophyllum tunbridgense* and *H. Wilsoni*, by some assumed to be identical with *H. unilaterale*, occupies above twenty-four pages of this number of the Society's Reports. The controversy, as our readers have doubtless heard long ago, is, or has been, if it be now ended, between Dr. Harvey, who defends Mr. Bentham's views that these two forms constitute but one species, and Mr. Andrews, who oppugns this opinion.

We have room only for the following extract of a letter from Sir W. J. Hooker to the author of this paper.

. . . "It is true the fronds are very similar, but I find such characters in the *involucres*,—and they afford the most tangible characters throughout the genus,—that I cannot fancy the one passing into the other—the texture of the *involucres*, the form of the valves always firmer, thicker, and more gibbous (almost semi-globose). In *H. Wilsoni* the direction of the involucre is different. In *H. tunbridgense* it lies in the same plane with the

fronds. In *H. Wilsoni* it is less sessile, and diverges with a curvature from the frond (as well represented in 'English Botany,' Suppl. t. 2686. Compare with *H. tunbridgense*, E. B. t. 162). Again, though *H. Wilsoni* has the valves of the *involucres* of a firmer texture, when they expand in age they are *more convex* in form, the sides turning up more, so that the valves almost become semi-cylindrical. In *H. tunbridgense* the texture of the valve is scarcely different from that of the frond, yet they retain in age, and when expanded, more of their original flattened or slightly convex form. Now when I see such characters invariably accompanied in the one case with entire margins, in the other with deeply serrated or almost spinulose ones, I cannot do otherwise but look upon them as distinct as any two Ferns can well be. . . ."

On p. 204 of the same Report there is a description of a new species of *Desmidiaceæ*, which has been named *Tetrachastrum mucronatum*. The specific characters are the following:—"Frond longer than broad, ends rounded, having a slight central concavity; the end lobe has its lateral projections terminated by a mucro; basal lobes broadly and bluntly triangular, having at their margin at each side either one, two, or three mucro-like spines; empty frond punctate, the *puncta* scattered.

"Symbol: *a, b, c*, parallel.

"Locality: bog, near Carrickmore, county Tyrone.

"Measurement: length of frond $\frac{1}{107}$; greatest width, $\frac{1}{255}$; width of neck, $\frac{1}{376}$; diameter at constriction, $\frac{1}{660}$; greatest depth, $\frac{1}{430}$ of an inch."

Note.—There is appended a coloured figure of this new discovery.

Weiter Zusätze zu meiner Flora der Pfalz. With a Lithograph.
(*Further Additions to the author's Flora of Pfalz.*)

In this additional sheet the author describes what he calls a hybrid (bastard) between *Epilobium palustre* and *E. parviflorum*. The description of this intermediate form given by the learned professor, amounts to twenty lines of such Latin as botanists employ: and as it might not be interesting enough to our readers to warrant putting it in print, either in the original or in a translation, which could only be, like the plant, a hybrid, between Latin and English, repulsive to some, and unattractive to many. If any reader of this desires to see it, we will under-

take to copy it and send it to any address, free of charge, if he or she will only drop us a line expressive of such wish.

In the same sheet there is a discussion about the distinctness of *Circea intermedia*; and the author claims this as one of the discoveries of his earlier observations. He maintains that it is no hybrid between *C. alpina* and *C. lutetiana*. We recommend the species to M. Boreau or to Mr. Baker, believing that Mr. Benthham would reject it at first sight. Some botanists are so obtuse as to be unable to distinguish between *C. lutetiana* and *C. alpina*. They have a striking resemblance, not in the herbarium only, but also when alive, though growing hundreds of miles asunder.

He (our author) also asserts that the chief characteristic distinction—*Hauptunterscheidungsmerkmal* (excuse, courteous reader, the insertion of this lengthy vocable; it is for thy delectation, and not to gratify the whim of the writer, that it has a place here)—between *Scrophularia Ehrharti* and *S. Neesii* is not constant. So one of these species must be discarded, unless some other more constant character than the shape and relative dimensions of the staminodium be discovered. For the sake of science is this desirable? The discovery of a new distinctive character would enable us to retain the plant as a species, and save us the trouble of writing an *alias* to one of them.

There is an historical account of a successful hunt for *Juncus lamprocarpus*, var. *nigritellus*, Don; and the possession and examination of Professor Don's *J. nigritellus* convinces Professor Schultz that *J. nigritellus*, Don, is not *J. nigritellus*, Koch. The latter, according to the Doctor, is a relative of *J. supinus*, and has no similarity (*keine Aehnlichkeit*) to *J. lamprocarpus*, with which Professor Don ultimately admitted that his plant agreed. Dr. Schultz next points out the difference between a plant discovered by him, and named *J. Kochii*, and *J. nigritellus* of Koch. Into this it is not necessary to dip. We cannot sufficiently estimate the value of these attempts to elucidate the history and relationships of these obscure plants, because we have not an adequate apprehension of the importance of the objects on which this great labour is bestowed. The perseverance of our Continental brethren is worthy of admiration, and we wish success to their disinterested and praiseworthy investigations.

On the New and Rare Varieties of Blechnum Spicant. By Mr. A. STANSFIELD, Todmorden.

This paper was merely announced in the April number of the 'Phytologist,' and a more detailed account was promised. This promise is now to be redeemed.

In Mr. Robert Sim's Catalogue, recent edition, besides the typical or normal form, *B. Spicant*, there are entered four varieties :—

B. multifidum, which is like the type, with the barren fronds once or twice divided.

B. lancifolium, characterized by narrow, barren and fertile fronds, neither above half an inch wide. A rare, very pretty, and high-priced variety.

B. heterophyllum, which combines the above three forms. A fine but irregular variety. This is also a valuable Fern.

B. ramosum is described by Mr. Sim as having prostrate, or nearly prostrate, barren fronds; and both barren and fertile fronds are beautifully crested, like *Asplenium Trichomanes*, var. *cristatum*. The commercial value of this plant is apocryphal or fabulous.

B. strictum has narrow, wavy, toothed or lobed fronds, described as a Fern, a new and striking variety.

Mr. Moore, in his 'Handbook of British Ferns,' describes the above varieties both verbally and pictorially.

The following are some of the most striking of Mr. Stansfield's varieties, viz. :—

1. *Blechnum concinnum*, which corresponds in some characters with *B. strictum*, Cat. R. Sim. Fronds very narrow, only one-eighth to one-fourth of an inch wide. This very beautiful, rare, unique (?) variety was found in Wales, on the road from Bettws-y-Coed and Capel Curig, near the summit of the pass.

Numbers 2 and 3, viz. *B. lancifolium* and *B. strictum*, were also found in North Wales.

4. *B. subserratum*, found in Yorkshire, supposed to be undescribed, and is said to be more distinctly pinnate than any other variety. The normal form is pinnatifid.

5. *B. imbricatum*, lobes of the fertile fronds not much longer than those of the sterile fronds; all imbricated. For 6, 7, 8, 9, 10, we beg to refer to Mr. Stansfield's interesting paper.

11. *B. anomalum*. This is what is called an *amorphous* form of the plant. The normal examples, and most of the varieties, have fronds of two kinds or shapes; the sterile ones being generally shorter and narrower than the fertile fronds. In this *amorphous* (we wish the discoverer had described it as *monomorphous*, fronds uniform; 'amorphous' means without form, shapeless, or unsymmetrical) variety the barren and fertile fronds are uniform, of the same shape.

12. *B. anomalum minor*: (*minus* is the proper form of the word.) For the rest of these varieties, want of room compels us to refer those who are interested in such objects, to Mr. Stansfield's paper, which contains in all twenty-two varieties, many of which were previously *nondescripts*.

Ferns: their Structure, Propagation, Development, Culture, Geographical Distribution, Uses, Classification, and Diseases.
By WILLIAM RAMSAY M'NAB, A.B.S.Ed., Librarian and Curator of the Herbarium of the Fleming Society of Natural Science (Nov. Coll.), Edinburgh. [*Read before the Society, and reprinted from the 'Scottish Gardener,' for private circulation.*]

Our readers are presented with an extract, from the above, on Fern diseases, a subject generally omitted by authors.

"Ferns," says Mr. M'Nab, "like all other things, are subject to their troubles and diseases. But the greatest evil under which they rest is the risk of *being eaten up*. Snails are very fond of indulging themselves in a desert of young fern-fronds, and their ravages are sometimes terrible. But the grubs of a beetle, *Otiorhyncus sulcatus*, threaten to be one of the greatest pterophagi which ever visited the collection of Ferns. I have succeeded in observing two diseases and several results of injury caused to Ferns. One is where the frond when young has been shot, or else nibbled by a rabbit. This I have found in a wood near Lasswade; while I got two fronds, which had been eaten by snails, in the Botanic Garden, among a number of *Lastrea Filix-mas*. . . . There are, as far as I have observed, two Fungi which infest Ferns: the one is *Uredo filicinus*,—the other I have not been able to get the name of. The *Uredo* infests the fronds of Ferns, and is of a reddish tinge. The specimen I have is on the *Polypodium Dryopteris*; the other is on the stem of *Pteris aquilina*, and is of a blackish tinge."

The pamphlet is illustrated by many beautiful micro-photographs, and will form an excellent introduction to any of the popular works on Ferns. We cordially recommend it to the perusal of such of our readers as have not yet made themselves acquainted with the Anatomy, Physiology, and general history of this group—in which Mr. M'Nab very properly remarks, "Phanerogamous Botanists end and Cryptogamous begin."

BOTANICAL NOTES, NOTICES, AND QUERIES.

ORTHOTRICHUM STRAMINEUM.

From a Report of the Proceedings of the Liverpool Field Club, 'Daily Post,' Monday, June 25, 1860:—"The first field meeting of the above Club was held at Raby, on Saturday last. About a hundred ladies and gentlemen, nearly equally divided in number, met on the St. George's landing-stage at a quarter before three o'clock, and took the railway boat for Chester, stopping at Bromborough station. After the departure of the train the party mustered on the platform, and the Rev. H. H. Higgins, one of the Vice-Presidents of the Club, addressed the members from an elevated position on the embankment, gave them a programme of the proceedings for the day, and announced that a prize, consisting of a well-known work on some branch of Natural History, of the value of half-a-guinea, to be selected by the winner, would be awarded to the lady who should collect the largest variety of Flowering Plants during the excursion. The party then proceeded along the adjoining lanes, gathering as they went, and diverging into the adjoining fields as fancy or the prospect of botanical recompense led them. About half-past five the party assembled at an *al fresco* tea, near Raby Mere, and did ample justice to a simple but substantial meal. When the tables were cleared, the several collections of plants were examined, and the prize awarded, by competent judges, to Miss Johnson, the collector of 87 different species. Other collections ranged from 60 to 80, including some rare and peculiar kinds. The list of new members, amounting to about 100 names, was then read, an arrangement made for a second field meeting at Hale, when a prize of a similar description will be offered, on Saturday, July 14th. The late meeting has not been without positive scientific value, Mr. Marratt having discovered a plant supposed to be new to the district, the *Orthotrichum stramineum*."

W. P.

NEW HABITAT FOR COTONEASTER.

To the Editor of the 'Phytologist.'

Sir,—My object in writing is to record a new habitat, on the Great Orme's Head, for the very local *Cotoneaster*. You are aware that the ordinary locality for the shrub is a tract of rough scraggy ground just above

the copper-mines. Several plants of it occur here, but they are unusually stunted, and bear evidence of being closely cropped by rapacious collectors. I would remark that the *Cotoneaster* appears to occupy the very same sort of habitat as it occupies on the Continent, according to Reichenbach's 'Flora Germanica.' The rock on which it grows is formed of the carboniferous limestone. I have no hesitation in saying that the *Cotoneaster* is a native plant, and no alien, as some have fancied. The new habitat in which I have found it precludes all possibility of its having strayed from cultivation. It is on a wild rocky ledge on the west side, facing Conway Bay, and is fruiting profusely. Within a stone's-throw of the *Cotoneaster* you may meet with *Silene nutans*, *Thalictrum flexuosum*, *Helianthemum canum*, and other plants that love a limestone soil. In mentioning the last plant, I would just call your attention to one inflorescence (I enclose specimens). You query "in pairs;" you will find they are placed (rather) alternately on the common stem. The flowers, as you remark, are small, and come out earlier than those of *H. vulgare*. Indeed, I remark (June 26th) that the *H. caninum* is nearly over, whereas the *H. vulgare* is in its full bloom. You do not allude to the dotted leaves of *canum*. The upper surface has the appearance of being covered with dark dots; from the centre of each a seta projects. Moreover, the setæ project at the tips of the leaf, and give it the aspect of being bristle-pointed. The plants grow intermixed, and it is easy at a glance to distinguish between *canum* and *vulgare*. *Canum* is apt to grow in round tufts, especially on the blocks of chalk.

PETER INCHBALD.

TRIFOLIUM ORNITHOPODIOIDES ON BLACKHEATH.

To the Editor of the 'Phytologist.'

Sir,—I had the pleasure of gathering *Trigonella* or *Trifolium ornithopodioides* last week, on a small mound covered with Trefoil, in a gravel-pit on Blackheath, close to the principal entrance to Greenwich Park. As the plant is mentioned in the 'Phytologist' as not having been seen on Blackheath since 1853, I thought this notice of it might not be unacceptable to your readers. I saw only a small patch of the *Trigonella*.

June 28, 1860.

CLARA A. JOHNSON.

BOWS MADE OF LABURNUM.

With reference to the answer to my question in the 'Phytologist' for June last, I wish to know whether the wood which in the statute is called *Awburn* was *Cytisus Laburnum*. Did this tree at that period (Edward VI.) grow in England, or was the wood imported from abroad? Haydn's 'Dictionary of Dates' says *Cytisus Laburnum* was brought into England from Hungary and Austria, in 1576. In the Honourable Daines Barrington's 'Observations on the Statutes' he considers *Awburn* to have meant *Alder*. Cotgrave's Dictionary: "*Aubourt*, a kind of tree called *Alburnus* (it bears long yellow blossoms, which no bee will touch)." If this *Aubourt* is the same as *Awburn*, and the *Awburn* is the *Cytisus Laburnum*, then I ask, Are the blossoms of the latter untouched by bees, as stated by Cotgrave, poisonous, as I believe seeds are, when eaten? If so,

what is the nature of the poison? Some higher power than Mellona's must have taught the bees to shun these blossoms. In Dr. Andrew's 'Latin-English Lexicon,' recently published, he gives "*Laburnum*—the broad-leaved Bean Trefoil, *Cystisus Laburnum*, L.," the meaning of which I cannot understand. S. B.

POETICAL BOTANY.

The following lines are quoted from recently published poetry:—

"No fruit allured the eye,
Save berries of the deadly *Aconite*,
Mr. Whyte's Translation of Dante.

Has anybody else besides the poetical translator seen berries on the *Aconite*?

"Rich as the cornelian with its ruby sheen,
Is the red Oxberry-wreath round the Bramble seen."
Ballads and Songs, by Edward Capern, a poetical postman.

Will some gentle reader be so good as to tell the querist what is the Genus and Order of the Oxberry-plant which wreaths round the Bramble?
Q.

OPHRYS ARANIFERA.

Some doubts were expressed by the reviewer of 'Sketches of the Natural History of Brighton,' about the above plant. Mr. Wm. Barrer very kindly sent fresh specimens, collected by himself near Pyecombe. The same excellent authority states that he believes "that there is no well authenticated Sussex station of *Saxifraga granulata*."

The Leipzig 'Botanische Zeitung,' of the 16th March last, gazettes the election, in consideration of their researches in Lichenology, of Dr. Lauder Lindsay, F.L.S., of Perth, who was lately awarded the Neill Medal of the Royal Society of Edinburgh, and Professor Nylander, of the University of Helsingfors, Finland, Russia, as Honorary Fellows of the Natural History Society of Halle, Germany.

Communications have been received from

Peter Inghald; Clara Johnson; Rev. T. F. Ravenshaw; H. C.; Sidney Beisly; John Sim; Frederick Reynolds; Harriet Beisly; Mrs. Merri-field; Frederick Clowes; Dr. Windsor, F.L.S.; Rev. J. Salwey; A. G. More; W. G. Lindsay, M.D.; W. P.; Q.; Edwin Green, etc.

BOOK RECEIVED FOR REVIEW.

Manuel de la Flore de Belgique; par François Crépin.

ERRATUM.

Page 170, line 27, after *Cratægus* insert *monogyna*, the specific name having been accidentally omitted.

VISIT TO HUMPHREY HEAD.

By DR. WINDSOR, F.L.S.

Having occasion to be at Flarkburgh, in Cartmel, Morecambe Bay, on the 11th of this month (July, 1860), I was very unwilling to be so near Humphrey Head, distant three to four miles, without paying it another, or third, visit.

It was, however, about four o'clock, P.M., before I could conveniently set off on my solitary walk, and I was obliged to be back at the Cark station soon after eight, in order to meet the train for Manchester, where I arrived soon after midnight. The afternoon was very fine, though hot and fatiguing, but the prospect of a rich botanical treat inspired me with persevering courage: nor was I disappointed.

On approaching the majestic frowning promontory, rising high above the surge of the watery element around, I met a gentleman just returning from it, and recognizing each other by our respective vascula as fellow-botanists, we entered into conversation. Finding that he was not aware of, nor had met with, some of the denizens of the locality, he readily fell in with my proposal to retrace his steps, and I had soon the pleasure of pointing out to him *Asperula cynanchica* and *Hypochaeris maculata*. The former, in full flower, occurs in tolerable plenty on the brow of the hill near the precipitous cliff, accompanied by *Helianthemum canum*, but the latter was quite out of flower, whilst its pretty ally or kindred species, *Helianthemum vulgare*, on the adjoining plateau was still in full bloom. *Asperula cynanchica* might be easily passed over by an unwary observer, and mistaken for tufts of *Galium saxatile*, as the dense inflorescence looked white, and the pinkish tinge was scarcely apparent until it had lain in the vasculum to the following day.

Hypochaeris maculata, stated in books to flower in July and August, and which I saw abundantly in flower on my last visit on June 23rd, 1857 (see 'Phytologist' for November, 1857, p. 257), now exhibited scarcely any of its yellow florets, but the large inflated calyx (much more bulky than in *Hieracium*) seemed somewhat inflected to embrace the whitish seminal organs. On this occasion I was only able to collect, near the base of the rock, four or five specimens, and none at or near the summit.

I sparingly gathered a few specimens of what I supposed to be *Hieracium pallidum* and *H. cæsium*. *Apargia hispida* was rather abundant.

The most showy plant observed was *Veronica hybrida* (Sm.). Several specimens, conspicuous by their beautiful azure-blue spikes, were gathered near the summit of the cliff, but others were visible too near the very brink of the precipice to be safely reached. I found also some specimens of it growing close to others of *Hypochæris maculata*, on a ledge not far from the base of the mountain. It seems to differ from the usual habit of *V. spicata*, by its larger size, and by the leaves being broader, more serrated, and more obtuse. *Spiræa Filipendula* was abundant on the summit of the hill. *Armeria maritima*, *Silene maritima*, and other sea-plants, as mentioned in my former paper, presented themselves at the base. *Geranium sanguineum* was still abundant in the woody and craggy portion of the mount first reached from Flarkburgh.

On this occasion I ascended (accompanied by the gentleman I had accidentally met) to the summit of the hill through a more dense part of the craggy wood than on my former visit, and thus not only saved considerable time, but also met with some plants which I should otherwise have missed. These were, *Hypericum Androsæmum* (not *anglicum*), with calyx unequally sepalled, but without petals, *Hypericum montanum*, *Paris quadrifolia*, abundant, and in several plants *quinquefolia* (5-leaved), and fine specimens of *Polystichum lobatum*. These were picked up without diverging from the path, as I was much pressed for time.

On some future occasion this woody portion of the locality would, I believe, be likely to repay a more scrutinizing exploration.

A FEW HOURS' BOTANIZING IN THE WOODS NEAR DUNKELD.

By JOHN SIM, A.B.S. ED.

On the 18th June, 1860, I and a botanical friend from Edinburgh, left Perth by rail for Dunkeld, intending to collect the *Asplenium germanicum* on Stenton rocks, three miles south of this ancient little town. On arriving at the terminus at Birnam,

we walked across Dunkeld bridge, and as the day was rather hot and sunny, hired a cab, and drove down the east side of the Tay to Stenton rocks. From Dunkeld to Stenton the country is almost uninterruptedly woody. In passing along we could not but admire the immense quantities of *Viola tricolor*? which thickly studded the small fields by the wayside; it was the large purple-flowered variety, a very beautiful plant. In several places, as we drove along, we detected in the border of the woods plenty of *Melampyrum pratense* and *Oxalis Acetosella*.

On arriving at Stenton rocks we were astonished to find a superabundance of *Asperula odorata* and *Agraphis nutans*: the former literally whitened the ground as far as we could descry. My friend, being strong and twenty years my junior, commenced the ascent of the rocks; I, being weakly, had to content myself at the foot. However, I was not altogether disappointed, as the reader will see by the following list of plants I collected and observed. I observed *Verbascum Thapsus*, plentiful, not in flower, and of course did not gather it; *Rosa spinosissima*; *Carduus acanthoides*, coming into flower; *Geranium lucidum*, frequent; *G. sanguineum*, plentiful; *Origanum vulgare*, abundant, not then in flower; *Arabis hirsuta*, abundant, rather out of flower; *Helianthemum vulgare*; *Thymus Serpyllum*; *Asplenium Ruta-muraria*; *Asplenium Trichomanes*; and the rare *Asplenium septentrionale* plentifully; and last but not least, the beautiful blue-eyed *Anchusa sempervirens*. This plant in two (at least) of our British Floras is not considered as a native of Britain; with all deference to these great men, I am of an entirely different opinion, and I would just as soon believe the common *Thymus Serpyllum* to be an introduction, as believe *Anchusa sempervirens* to be a plant brought to the foot of Stenton rocks by human agency. No one in reason could ever consider it an escape from cultivation in this lonely unfrequented spot, far removed from the abodes of civilization, nurseries, or gardens; it grows in great abundance and luxuriance, and with azure eyes looks undisturbed on the blue vault above. After fruitless search and vain for *Asplenium germanicum*, we wended our way for two miles to Caputh ferry, crossed the ferry, and travelled to Murthly station, a distance of one mile. On the way, growing from a stone wall, we saw abundance of *Cystopteris fragilis*, fronds nearly a foot in length. We were struck with the abundance of *Anthemis arvensis*

which grew on some fields by the wayside. In a bog at Murthly station we collected *Menyanthes trifoliata*, *Carex curta*, and a few other *Carices* more common; and near its margin *Pinguicula vulgaris* and *Genista anglica*. I may also state that by the margin of a stream at the foot of Birnam Hill, I saw plenty of *Polypodium vulgare*, *P. Oreopteris*, *P. Dryopteris*, and *P. Phegopteris*. I also collected a few specimens of *Carex pallescens*, and *Saxifraga aizoides*, *Bartramia fontana*, and *Mnium punctatum*, but neither in fruit.

Bridge End, Perth, July, 1860.

SEAWEEEDS.

Sir,—May I take the liberty of inquiring through the medium of your pages, whether any of your correspondents have duplicates which they could spare me of *Desmarestia Dresnaili*, *Naccaria hypnoides*, *Zonaria collaris*, *Z. parvula*, *Punctaria latifolia*, *Delesseria angustissima*, and *Rhodymenia cristata*?

While on the subject of *Algæ*, I may observe that the harvest of seaweeds on this coast is not only very late this year, but likely to be very deficient. Many of the more delicate *Algæ*, which are usually found here between the end of May and the beginning of July, have not yet made their appearance. Of those that have appeared, some are stunted in growth; others are very scarce. Referring to my notes, I find that last year, on June 5th, I gathered *Ectocarpus Mertensii*, *Cladophora uncialis*, and *Taonia atomaria*; and that on the 15th I found on the beach *Griffithsia barbata*, *G. corallina*, and *Naccaria Wiggii*. With the exception of *Taonia*, now (July, 1860) about three inches high and without fruit, and one tuft of *C. uncialis*, too small to gather, I have not yet met with these plants. If, however, plants which come under the common term *seaweeds* have been unusually scarce, Diatoms and also Zoophytes have been particularly abundant on this shore.

It would be interesting to ascertain whether these peculiarities have been observed on other parts of the coast.

In conclusion, I beg to add that I have still a few specimens of *Griffithsia barbata*, and some other plants collected in 1858

and 1859, which I shall be happy to give to any botanists who desire to possess examples of these Algæ.

MARY P. MERRIFIELD.

2, Dorset Gardens, Brighton.

MAMMOTH TREES.

Edinburgh Botanical Society, Jan. 12, 1860.

Extract of a paper by Mr. Murray, read to the members of the Ed. Bot. Society:—

“The chief part of Mr. Murray’s paper was occupied with an account of the Mammoth Tree (*Wellingtonia gigantea*), and of an expedition sent to procure seeds of it, by his brother, Mr. William Murray, of San Francisco. The first place where it was found was at a spot called the Calaveros Grove (more recently the Mammoth Tree Grove), near the head-waters of the Stanislaus and San Antonio rivers, in long. $120^{\circ} 10' W.$, and $38^{\circ} N.$, and about 4,590 feet above the sea-level. There the number of trees still standing amounts to 92.

“Two other localities are now known, one in Mariposa, and the other in Fresno county. The Mariposa Grove contains about 400 trees, and the Fresno Grove about 600. The tree is undoubtedly the largest and most magnificent known on the face of the earth. Its ally, the *Sequoia sempervirens*, is not far short of it in size, but still stands a little in the background. The average dimensions of both trees when full-grown are about 300 feet in height, and ninety in circumference. We have great difficulty in realizing this immense height, and to assist us we must have recourse to other objects of comparison. To an Edinburgh man we have a very good one. The Gas Company’s great chimney, although built in a hollow deep below Nelson’s Monument, yet has its top seven feet higher. Now it is only 329 feet high in all, including its pedestal, which is 65 feet in height; while one of these mammoth trees was actually 450 feet high, or nearly a third higher than that chimney, and Lord Richard Grosvenor, in a letter quoted in a recent number of the ‘Gardeners’ Chronicle,’ speaks of having seen one 116 feet in circumference, and 450 in height. It is taller than St. Peter’s, and little short of the

height of the Pyramids. Another way of bringing home to our sensations an idea of the enormous size of these trees is that used by Messrs. Sang, nurserymen, Kirkcaldy, in a neat and comprehensive little account they have given of the tree. They calculate the quantity of wood in a tree, and its value at 1*d.* a foot. The result is, £6,250 for a big one. What a nice little provision an acre of *Wellingtonia* would make for a younger son or daughter of the proprietor of an entailed estate! The trees seem all to rise like solid pillars, without a branch for nearly two-thirds of their height, often with furrowed bark, so as to look like fluted columns. Mr. Murray exhibited several photographs of the trees from Mariposa Grove, one of which was ninety-four feet in circumference. The tree is perfectly hardy in Britain, grows very rapidly, and, although only introduced in 1853, has already reached the height of 9½ feet, and 19 inches in circumference at base, at Castle Martyr, near Cork, and not much short of this both in England and Scotland, and has borne ripe fruit at Thetford in England. We may therefore reasonably hope that we shall ere long be independent of the sacred giants of the West for a sufficient supply of good seed. In the meantime, we have the satisfaction of knowing that we can make plants by cuttings with the greatest facility; and what is most important in the great majority of cases, they grow erect and readily from leaders."

RUNNEYMEAD PLANTS.

Notice of a few interesting Plants collected during a day's Botanizing on the confines of Middlesex, Berkshire, Bucks, and Surrey. By J. W. T. and A. J. (in a letter to the Editor, July 14th).

We left, at the Wraybury station, the London and South-western railway, Windsor line, about eleven o'clock. The sky was bright and the weather warm, a most unusual state of atmospheric affairs this season. The heat was felt rather more than was pleasant to people who were fain to wear their winter toggery—overcoats and warm worsted socks—long after May, the old and orthodox period for changing winter into summer attire. The wisdom of the old adage, "Before May is out, cast not a

clout," was but too well established during the present year. Leafy June with longer days brought no increase of temperature; but the north-east winds of July brought us abundance of chilling, misty, vaporous blasts from the Northern Ocean, mingled with the smoke of London, which rendered our atmosphere cold, murky, and dismal. Consequently we enjoyed the walk over the rich meadows between the station above named and Horton, where the mower had now done whetting his scythe, and had given place to the spreading-machine, and to the forks of the brawny-limbed haymakers, both male and female.

The most noticeable and ornamental meadow-plant in that district is *Geranium pratense*; its large deep purplish-blue flowers were well and beautifully contrasted with the white blossoms of the Queen-of-the-Meadow, as it is named in some countries, *Spiræa Ulmaria*, the officinal Valerian, Cow Parsnip, etc. etc. None of these are rarities, excepting the first, and it is no rarity here, but it is rare in many parts of England.

Our next field of research was Staines common, which is more like a meadow than a common. It is an extensive watery tract, of a peaty soil, and a uniformly level surface—not very attractive qualities to plant-seekers.

By the stream that flows through this level grassy flat, the following plants were collected, viz. *Acorus Calamus*, very plentiful all along the verge of the streams, in the wet hollows, marshy depressions, and ditches. This plant has a very extensive range in the Thames valley, extending from Kingston and Hampton Court, certainly from Walton bridge upwards; the writer of this knows not how far through Oxfordshire and Gloucestershire. *Butomus umbellatus* was sparingly seen. The beautiful *Hottonia palustris* abounds in a ditch by the roadside leading from Buckinghamshire to Staines. With this pretty plant were associated *Hydrocharis Morsus-ranæ*, *Sparganium ramosum*, *Stellaria glauca*, etc.

Runnymede, very celebrated in the constitutional history of England, is more famed for its political associations than for its botanical productions. But this field is worth a visit if this can be accomplished at no very considerable expenditure of time and physical exertion. One of the largest of the beautiful meadows between St. Ann's Hill and the deep and smooth-flowing Thames, was literally blue with the flowers of *Knautia arvensis*, the largest

form surely ever seen, for it far overtopped the long, unmown grass. Some of the specimens were at least four feet long. Crow Garlic also abounded in this meadow. So did the hedges abound in the lovely *Vicia Cracca*, of the intensest blue ever beheld. The banks produced *Salvia verbenaca* and *Cichorum Intybus*. Can any one acquainted with the economy of this plant tell the writer if the cultivated form or variety of this plant be a perennial or a biennial? The river in many places was partly covered with the broad leaves, and ornamented with the flowers of that queen of British aquatics, the white Water-lily, together with her yellow sister the Brandy-bottle-plant.

Between Staines and Ashford fine large plants of *Trifolium striatum*, and equally large forms of *Ornithopus perpusillus* were, in sportsman's phrase, 'bagged.' On the roadside, just under the wall of Ashford churchyard, a single specimen of *Potentilla argentea* was detected; the only one seen during the day.

This ended our botanizing in this quarter, on the day before St. Swithin's.

ADDITIONS TO THE FLORA OF SYDENHAM.

By H. B.

This season, July, 1860, most of the shingle-mounds on which *Verbascum Lychnitis* grew so plentiful last summer have been removed, and only a few specimens of the rarest of our British Verbascums remain. On the old brick wall at Lower Sydenham the rarest of the British Sedums, *Sedum sexangulare*, still grows. The severe long winter of 1859 and 1860 did not affect materially its condition. In addition to this, one of our *rarissimæ*, *Sedum album*, grows in close proximity to its much rarer relation.

In the Ravensbourne, between Lower Sydenham and the London, Chatham, and Dover railway, the troublesome American waterweed, *Anacharis Alsinastrum*, grows everywhere, in dense, large masses. Not far from the foot-bridge which crosses the little brook, the rare *Scirpus sylvaticus* appears, but in no great quantity. Does any reader know if this plant has ever been detected in Surrey? It used many years ago to grow plentifully in a wood between Hampstead Heath and Finchley. The recently introduced Trefoil, *T. resupinatum*, is still spreading, and

bids fair in time to reach the summit of Sydenham Hill. *Euphorbia exigua*, *Linaria minor*, and *Chenopodium polyspermum*, var. *acutifolium*, are plentiful about the roadsides. *Nardosmia fragrans* has pushed itself under the paling, and is taking possession of the side of the Lawrie Park road, not far from the station. *Euphorbia Cyparissias*, *Hypericum calycinum*, and some other Sydenham exotics, are probably indebted to cultivation for their establishment in this locality.

July 20th, 1860.

DROSERA ANGLICA.

On the supposed New Discovery of Drosera anglica in Lancashire.

(To the Editor of the *Phytologist*.)

Sir,—In the Report of the Thirsk Natural History Society, 'Phytologist,' vol. iv. p. 57, *Drosera anglica* is stated to have been found in Woolston Moss, near Warrington, and sent by Mr. H. Ecroyd Smith, and is recorded both in the Thirsk Report, and in the 'Phytologist' as a discovery of note. And it is also stated, that this fact is not recorded in the fourth volume of 'Cybele Britannica.' The latter fact may be truly stated, but not the former. It has been long known to the botanists of Manchester and Leigh, and surely of Warrington also, as a plant which abounds in Lancashire, and especially in the Chat Moss. It appears also in a list of plants collected by Mr. D. Green of Leigh, one morning in July, 1858, and this list appeared in the 'Phytologist' for November, 1858, p. 614.*

Was the editor, like *Homerus bonus*, napping when this pretended novel information was published? Q.

The Editor of the 'Phytologist' was wide awake when the Thirsk Report was received and sent to press, but he does not often take the liberty of altering communications sent by reporters on whose judgment and accuracy he has the utmost reliance.

It may be said in extenuation of the shortcomings of the author of the Report which is the subject of animadversion, and

* In Chat Moss, *Drosera anglica* is nearly as common as *D. rotundifolia*, etc.

those of the learned author of the 'Cybele,' that botanists sometimes, like debtors, have but short memories. They do not remember what they borrow so long as they remember what they lend. The author of the 'Cybele' might have seen the fact in Buxton's 'Flora of Manchester,' and he probably did see it in the 'Phytologist,' but, being oblivious, he forgot to enter it in the 'Cybele.' The Editor agrees with his correspondent Q. that this plant was known in the Mersey Province before the publication of the Thirsk Report as quoted above, and that the fact was not first promulgated by Mr. E. Smith, although the latter is credited with this fancied new discovery.

ISATIS TINCTORIA.

The notice in last month's 'Phytologist' of *Isatis tinctoria*, as growing in a railway cutting near Wandsworth, suggests a question of considerable interest, which many persons, both botanists and others, must have the means of answering. So many plants are continually making their appearance on railway embankments, which have never been seen in any neighbouring locality from whence they can have spread, that if these situations are to be considered as legitimate habitats, they constitute a very material addition to the local Floras. But, I confess, their effect on me is to raise a strong presumption that the plants are there only as products of culture. It is certain that the railway companies sow grass on the embankments and in the cuttings, and is it not probable that the *Melilotus alba*, *Oenothera biennis*, and other plants of known or suspected foreign origin, which so often start up in these localities, have also been sown there? If not, the *Melilotus* in particular, from being a plant of doubtful wildness, has grown into one of our common species, and shows, to say the least, a remarkable preference for artificially piled-up soil. I shall be glad if it is so; but it is to be hoped that the point will be cleared up before these stations are recognized as habitats, in the proper sense of the word, for any of our rarer plants.

While I am on the subject of *Isatis*, I may mention that, in the summer of 1858, I observed it in a Kentish locality, which

I have not seen recorded, between West Wickham and Keston church, a district which also possesses *Narcissus Pseudo-Narcissus* and *Lathræa Squamaria*. Of the *Isatis* I only found three plants, which were strong and healthy, but being in the centre of a meadow, they are doubtless prevented from exercising their great capacity of spreading, by being regularly mowed before they have produced their fruit. The short time during which they can be found in flower before the signs of them are thus effaced, is probably the cause, or one of the causes, why they have so long escaped notice.

J. S. M.

August 12th, 1860.

ROCCELLA TINCTORIA AND R. PHYCOPSIS IN THE
ISLE OF WIGHT.

By the REV. T. SALWEY.

Sir,—Such of your readers as are lichenists will doubtless feel much interest in knowing that my friend Mr. More, of Bembridge, has discovered two stations in the Isle of Wight for *Roccella tinctoria*, as well as (if it be indeed a distinct species) the still rarer *R. phycopsis*. He found these last year on the ruins of the old church-tower at St. Helen's, where it grows only in a small patch, which it is hoped any lichenists will be kind enough to spare, lest the habitat should be destroyed. But this year he finds the plant growing "in the greatest abundance all over the north side and tower of the church at Godshell." My friend Mr. H. Hyndman also found a single, but a remarkably fine specimen of the form *phycopsis* this spring on the church at Shanklin. The only habitats given in Hooker's 'English Flora' are "maritime rocks in the extreme south of England, Guernsey, Portland Island, and abundant on the steep rocks of the Scilly Islands." I found it rather abundant myself some years ago in Guernsey, but failed in detecting it at the Land's End in Cornwall when botanizing there about seven years ago, though I have no doubt a more extended search would find it somewhere on the range of rocks between Lamorna and the Land's End.

The editor of the 'English Flora' has fallen, as I conceive, into a great mistake in stating that "the *R. phycopsis* of Acharius

seems to be only a variety of *R. fuciformis*, and almost intermediate between it and *R. tinctoria*." I can see no similarity whatever in the form *Phycopsis* to *R. fuciformis*. It is unquestionably a variety only of *R. tinctoria*. These two forms grow intermixed both in Guernsey and the Isle of Wight. Fries, as I think, correctly makes only two *Roccellas*, *tinctoria* and *fuciformis*, but Acharius and Schærer both admit *R. Phycopsis* as a distinct species. I have not Acharius's work by me to refer to, but in the description of the two plants by Schærer I cannot see sufficient grounds for keeping them distinct. He describes *R. tinctoria* as having the thallus "teres, tandem nodulosus;" *R. Phycopsis* as having the thallus "tereti-compressus subangulosusque." Now all the filamentous Lichens vary so much in the comparative roundness and occasional flatness of the thallus, that I cannot consider the above characters as sufficient to keep them distinct. Again, he says of *R. tinctoria*, "rarius simplicibus vel bifurcatis;" of *R. Phycopsis*, "rarius simplicibus vel dichotomis." Here the only distinction is between *bifurcatis* and *dichotomis*, and what that distinction is I am unable to discover. Then with respect to the soredia, the only distinction he gives is that in *R. Phycopsis* these are "frequentissimis, sæpe agglomeratis." But in the *Parmeliæ* and other sorediiferous Lichens we do not consider the greater or lesser abundance of soredia as a distinctive character. The chief distinctions between these two forms of *Roccella* is that expressed in fact in the name itself, "*Phycopsis*," which I imagine was formed from *φυκος* and *οψις*, 'having the appearance of the Bladder Seaweed,' the form *Phycopsis* having, in fact, swellings here and there upon its frond.

Though I cannot consider that *R. tinctoria* and *R. Phycopsis* are any more than varieties of the same plant, it is at all events interesting to know that we have the form *Phycopsis* growing in the Isle of Wight. I would only add that some of the plants from St. Helen's, and especially the one from Shanklin church, are identical with a specimen I have of *R. Phycopsis* from the herbarium of Delisse, given to me by my friend Mr. Ralfe, of Penzance.

Worthing, July 13th, 1860.

VERONICA PEREGRINA AT PERTH.

By JOHN SIM, A.B.S.ED.

This city, as is well known, is celebrated for the fine situation it enjoys, on the banks of the noblest river in Britain, and also for the exquisite scenery with which it is surrounded; hence, probably, it received the rather flattering name of the "Fair City." But Perth, in spite of its pleasant site and charming environs, has only an equivocal reputation among some members of the amiable science. The conservatives, who look with no friendly feeling at the annual increase of the British Flora in this quarter, those who scruple to admit into orthodox lists of native productions plants which were not recognized by Ray, Hudson, Withering, and Smith, have their patience severely tried and their equanimity much disturbed by new claimants to a share of botanical notice. The plants themselves are blameless; they could not help being the unconscious cause of dissatisfaction to some part of the brotherhood; and the discoverer is also sakeless, for he only found them, but did not place them there. He merely records the facts as they occur, and sends the simple statement of his discoveries to the 'Phytologist,' the refuge for these interesting though troublesome wanderers from their natal dwellings.

The inhabitants of Great Britain are a mixed race, and hence they partake, it is to be hoped, of the good qualities of the mingled races from which they have sprung. Is it strange that our Flora should be formed after the same ethnological type? Another fresh comer has to be announced, an arrival not so startling as that of *Aremonia agrimonioides*, which is at home on the hills of Greece and the Levant; but a visitant from the opposite continent recently found in Ireland a kind of halfway-house between Great Britain and the western parts of Europe.

This plant, *Veronica peregrina*, was gathered by me last month in Mr. Turnbull's nursery, near Perth. I found it growing abundantly as a weed of cultivation, and it was probably imported with seeds. Be this as it may, its luxuriance gave unmistakable evidence that it had found in the vicinity of the Fair City a soil and climate congenial to its nature. This plant has also been found at Belfast; and as it is widely distributed throughout the continent of Europe, may also become permanently and ex-

tensively dispersed in the British Isles. On the Continent it occurs in Italy, Dauphiny, Germany, and in some places in the north of Europe. It appears to be intermediate between *Veronica Anagallis* and *V. serpyllifolia*, much smaller than the former, but larger than the latter, with a more erect habit. It is an annual; but some of our annual weeds are very difficult to subdue. The gardeners informed me it was a very troublesome weed. I am not the original discoverer of this plant; it was detected by a botanical friend of mine a few days before, but he did not know its name. I went and gathered it myself, and found it to be *V. peregrina*, but to dissipate all doubt about it, sent a specimen to Mr. C. Babington, who kindly replied, confirming, by his superior knowledge, my own opinion. He told me he had examples of it from Belfast and the Channel Isles.

Bridge End, Perth, July, 1860.

CAMPANULA RAPUNCULUS, ETC.

The following remarks on the botany of Hampshire are extracted from a kind correspondent's note to the Editor, June 13, 1860:—

"I beg to say that Aldershott is not a new station for *Campanula Rapunculus*; it was published some years back in the 'Botanical Gazette,' and, I think, in the 'Phytologist' also?*" I was with Dr. Bromfield at Headley in 1850, and showed him the *Chrysosplenium alternifolium* and some other plants which he wished to see, but we were unfortunately too early for the *Campanula*.

"Is it known that *Ornithogalum pyrenaicum* is abundant in some of the woods at East Ilsley in Berkshire? I was staying there two months ago; it was then just coming up with Bluebells, etc. etc., and appeared to be equally plentiful. I am not sure if I should have known the plant in the stage it was then in; but before I left, a friend gave me a small piece which was gathered last year, and enabled me to recognize it immediately.

"W. W. R."

* Our correspondent thinks rightly. Dr. Bromfield, in 'Phytologist,' vol. iii. 1091, observes: "At Aldershott *Campanula Rapunculus* grows in very considerable plenty on hedgebanks and borders of fields, as intimated to me by Mr. W. Reeves last year, etc." This agrees exactly with what Mr. A. G. More states in reference to this plant, vol. iv. 81.—ED.

Reviews.

Manuel de la Flore de Belgique. Par FRANÇOIS CRÉPIN.
Bruxelles: Émile Tarlier. 1860.

The introduction to this work, on the botany of Belgium, occupies 75 pages of the volume, and it contains the following articles:—1st. *Herborizations*, or what are usually called in our country “botanical excursions.” In this article M. Crépin advises the young botanist to limit his observations to a mile or so round about his residence, and to confine his studies to the plants of his own immediate neighbourhood, viz. to the productions of his own parish or to the environs of his own town or city. In collecting, classifying, and analyzing these, our author very justly observes that one year or one collecting season may be profitably spent. With much felicity he describes the pleasure enjoyed by the *neophyte* when he succeeds in identifying the first plants of his own collecting, and is able to distinguish an *Anemone* from a *Ranunculus*, and *Draba verna* from *Capsella Bursa-pastoris*.

In the second year of study, after the plants of his vicinity are exhausted, the tyro is recommended to extend his promenades to remoter places, and to study vegetation under different aspects. Our author’s remarks on laying a good foundation are perspicuous, and very judicious. The following is submitted as a sample of the practical character of this part of the work:—

“Most botanists, both young and old, invariably follow the track which has been repeatedly trodden by other botanical predecessors. They travel to some noted locality by the same road, go along the same hedge, pass through the same cornfields, search the same bogs, etc., as have been searched by botanists, time out of mind. Hence a locality which produces curious and interesting subjects is often undiscovered for many years, until a stranger botanist, who does not know the famed localities, by accident stumbles upon some rarity produced in a place which the local botanist did not think worth looking into. The route to and from a rich locality should be varied as much as possible.”

That our author is well qualified, and therefore entitled, to counsel the younger members of the fraternity, is very evident from one little *trait*. He recommends the young botanist not to forget slippers when he is packing up his traps for a long

excursion, "as he will find them very comfortable to his toes, after trudging a long day in heavy, hob-nailed shoes."

M. Crépin next discourses very sensibly about the preparation of the botanist's herbarium, without which no satisfactory progress can be made in the pursuit. In drying succulent plants, he appears to prefer a dry to a moist medium for destroying their vitality. He recommends drying them in an oven. Many collectors plunge them in boiling water for twenty or thirty seconds. We have known this successfully accomplished by the application of a mixture of naphtha and corrosive sublimate. But it requires much practice and skilful manipulation to succeed in preserving the colours of plants, and even to preserve the leaves of some of the succulent species, such as the Sedums, Houseleek, etc.

The botanical library of the young botanist constitutes the third portion of the introduction to the Belgian Flora; and the lists of works on the elementary principles of the science, on classification, on descriptive botany, on the geography of plants, on published collections of dried plants and figures (plates), are extensive. On "géographie botanique," our author enters Professor De Candolle's elaborate work and Jules Thurmann's 'Essai de Phytostatique appliqué à la Chaîne du Jura et aux Contrées voisines.' He does not notice our 'British Cybele.' Possibly he deems its information too local for general purposes.

The fourth article is on the botanical geography of Belgium, which M. Crépin divides into four regions, viz.:—1. *Région septentrionale*, *Région méridionale*: these contain each two zones; the first, *zone maritime*, and *zone campinienne*; the second, *zone argilo-sablonneuse*, and *zone calcareuse*; the third, *Région ardennaise*; the fourth, *Région jurassique*. The characteristic plants of the northern regions and their four zones are common both to Belgium and Great Britain, except *Dianthus carthusianorum* and *Arabis brassicæformis*,—M. Crépin does not adopt Dr. Smith's rule for the formation of similar compounds, as *brassicæformis*, a rule strenuously recommended by a writer in the 'Phytologist,' who, by the bye, does not always render implicit obedience to it himself,—*Sisymbrium austriacum*, only a straggler in England, *Biscutella levigata*, *Helianthemum pulverulentum*, *Fragaria collina*, *Vincetoxicum officinale*, *Gentiana cruciata*, and *G. germanica*,—is this *G. Amarella* of British botanists?—*Digitalis lutea*, *Ajuga genevensis*, *Stachys recta*, *Stachys*

alpina, *Globularia vulgaris*, *Lactuca perennis*, *Phalangium Liliago*,—has any one ever answered a query about this plant, some time ago entered in the ‘Phytologist,’ viz. Why is it called St. Bruno’s Lily? I might be asked why is St. John’s-wort, Herb-Robert, Herb-Bennet, and several other plants, so called?—*Polygonatum vulgare*, *Cephalanthera pallens*, *Carex humilis*.

In the third region, that of Ardennes, several of the characteristic plants are common both to the British Isles and to Belgium, viz. *Stellaria nemorum*, *Geranium sylvaticum* (this plant has a very extensive range; it grows in Lapland and Iceland), *Cerasus Padus*, *Agrimonia odorata*, *Circæa intermedia*, *Meum Athamanticum*, *Trientalis europæa*, *Ajuga pyramidalis*, *Vaccinium uliginosum*, *Hypochaeris maculata*, *Carex lævigata*, *Poa sudetica* (only recently detected in England; see ‘Phytologist’ for November, 1859), *Festuca sylvatica*, *Polypodium Phegopteris*, *Equisetum sylvaticum*.

Our author remarks that in the eastern part of this region many interesting species appear, viz. *Lycopodium alpinum*, *Carex pauciflora*, *Juncus filiformis*, *Empetrum nigrum*, *Viola lutea*.

The characteristic plants of the fourth region, viz. *Jurassique*, are *Campanula glomerata*, *Ajuga genevensis*, *Gentiana cruciata*, *Illecebrum verticillatum*, *Helosciadium inundatum*, *Plantago Coronopus*, *Myrica Gale*, *Alisma natans*, *Hydrocharis Morsus-ranæ*.

On “*l’espèce végétale*,” there is a long article, which is humbly recommended to the attention of all who are well acquainted with the recent publications on the “origin of species.” It may here be briefly stated that our author is not yet a convert to Mr. Darwin’s views, and he quotes a recent work by Dr. Godron, where it is maintained that species are immutable.

A dictionary of botanical terms, a list of Belgian botanists—among these *distingués* we are very much pleased to see that our author makes honourable mention of the assiduity and success, in the investigation of the botany of Belgium, of one of our fair contributors, who has from time to time enriched the pages of the ‘Phytologist’ with her remarks on Belgian and British plants. Analytical or dichotomous tables fill up the remainder of this learned, comprehensive, and well-arranged introduction to the new manual of the Belgian plants.

The descriptive part of the work is digested according to the Natural System, as it is called, commencing with the Order

Ranunculaceæ, and ending with *Lycopodiaceæ*; and the arrangement of the orders, genera, and species appears to be, with only slight exceptions, the same as that of Cosson and Germain's excellent work on 'The Flora of the Environs of Paris.' The ample descriptions of the orders are followed by dichotomous analytical tables of the genera, and the description of the genera is followed by similar *synopses* of the species. The species are named, numbered, and localized. The ordinal description is followed generally by a popular and brief notice of the economical and medicinal uses and preparations obtainable from the plants of the Order.

Our author is not quite so liberal in his estimate of species as some Continental botanists, Jourdan, Boreau, and even some British members of the brotherhood. He enters only seven aquatic *Ranunculi*, not under the name *Batrachian*, but simply as constituting part of the genus *Ranunculus*. These are *R. hederaceus*, *R. tripartitus*, *R. ololeucus*, *R. aquatilis*, *R. trichophyllus*, *R. divaricatus*, and *R. fluitans*.

Cerastium tetrandrum does not appear in this Belgian Flora, and *C. semidecandrum* is entered with the remark, "*Espèce peu connue*," obscure species. *Elatine Hydropiper* is qualified by *espèce très-douteuse*.

Acer Pseudo-Platanus is not distinguished by the sign of alienism. *Corydalis lutea* is branded, but not *C. solida*.

The genus *Rubus*, the puzzle and plague of German and English botanists, is represented in Belgium by only four species, viz. *R. saxatilis*, *R. idæus*, *R. cæsius*, and *R. fruticosus*. *O fortunati Belgici!* exclaim the tyros, *sua si bona norint*. We hope they are sufficiently thankful, and that other botanists are endowed with patience, for which virtue they will have much occasion in England, Germany, and Sweden, where Nature appears to enjoy the malicious pleasure of mystifying her most ardent and devoted admirers with never-ending, still-beginning, new forms of Brambles, Buttercups, Hawkweeds, and Willows.

The list of *Hieracia* is of moderate dimensions, only exceeding that of the *Rubi* by three species, one of which, *H. Auricula*, is one of the most doubtful of British Hawkweeds. Even here, in Belgium, a new form or species has been discovered and distributed by M. Crépin, who promises to publish the result of his labours in this fruitful field of botanical investigation.

The Belgian Willows here enumerated are only twelve, and the only indigenous poplar is *P. tremula*.

Among the monocotyledonous plants, the Tulip and the Fritillary are both denoted with the mark of alienism; the *Ornithogala*, on the contrary, pass muster without any stigma. Most British botanists deem *Ornithogalum umbellatum* an introduced plant, and many regard both the Tulip and Fritillary as genuine natives.

This manual of the 'Flora of Belgium' will occupy an exalted station among the botanical works of Europe. It is truly a manual, not in the German sense of this term, which sometimes means two large 8vo volumes, containing nearly three thousand pages. This work of M. Crépin's is a manual in the etymological, economical, and practical sense of the word. If bound up tightly, without the introduction, the botanist could carry it in his waistcoat-pocket. Its plan and arrangement are most judicious, and the execution is not inferior to the design. It will surely meet with a very warm reception from its author's countrymen. We hope he will receive some solid proofs that his labours are appreciated—something more valuable than the commendation of good intentions well carried out.

In some respects it is preferable to the excellent work of Messrs. Cosson and Germain, which has evidently served as a model for the 'Flore de Belgique.' It is very much less bulky, consequently it is both cheaper and portable; and the economical and medicinal properties of the plants being simply and concisely stated, will render it invaluable to doctresses and village practitioners of the healing arts.

The number of native and spontaneous plants in Belgium is, in round numbers, about 1,300, inclusive of aliens or imperfectly naturalized species. The number of British species, according to the London Catalogue, which is the mean, as mathematicians say, between Mr. Babington's and Mr. Bentham's estimates of British plants, is 1,500; consequently, there are 200 more species in England than in Belgium. This estimate is not, however, exactly correct; for although the Floras of the two countries have the greatest possible resemblance, some orders and genera being represented in both countries by the same plants, there are about 120 plants growing naturally in Belgium which have not as yet been detected in England. The number of Belgian species being,

as has been stated, 1,300, and deducting the 120 plants not found in Britain, the number of species common both to England and Belgium is 1,180, and hence, according to Cocker, there are 320 British plants which are not found in the Belgian Flora.

In a few plants, which are both English and Belgian, the relations expressed by the terms *native*, *spontaneous*, *naturalized*, appear to be reversed, or a plant native in the one country is only spontaneous or naturalized in the other, and *vice versâ*. *Althæa officinalis* has the brand (†) prefixed, with the subjoined remark,—“Plante cultivée. Çà et là naturalisée près des habitations.” This may be because Belgium has but little seacoast. The plant likes a stiff, wet soil, not far from the sea or a tidal river. *Althæa hirsuta*, on the other hand, one of our most recent introductions, is entered as truly native in Belgium.

Again, *Salvia pratensis* is the common plant of the genus in Belgium; *S. verbenaca* and *S. Sclarea* are entered as *espèces cultivées*, only grow accidentally in Belgium. Also, *Primula vulgaris* is absent from the Belgian Flora. *P. elatior* is entered, “Assez commun en bois frais et assez rare en prairies.”

In England, *Primula elatior* and *Salvia pratensis* are among our rarest plants; while *Salvia verbenaca* and *Primula vulgaris* are very frequent, if not very common.

There are two plants entered in M. Crépin's list without any sign of their exotic origin, though they are universally recognized as belonging to this class, viz. *Solanum tuberosum* and *Datura Stramonium*. On the contrary, *Lycium barbarum*, which is naturalized in some parts of England, is marked with the sign of its exotic descent. Perhaps M. Crépin will inform our readers why he has prefixed the *stigma* to the *Tea-plant*, and let the *Potato* and *Thorn-apple* go scot-free.

The *Lathyrus tuberosus* of modern British botanists is not *L. tuberosus* of the Continental botanists. Our *L. tuberosus* is synonymous with their *Orobis tuberosus*. Those who take charge of nomenclature in Great Britain have combined the British *Orobi* with the British *Lathyri*. We cannot detect *Arabis hirsuta* in the Belgian Flora, and *A. Turrita* has a place among the undisputed natives. *Arabis hirsuta* appears to be absent in Belgium.

We have another question with which we beg to trouble Mr. Crépin, viz. the orthography of *Thapsus* and *Thapsiforme*! On

page 90, these words are twice written as above, and on the same page in the catalogue of the species they are respectively written or printed *Tapsus* and *Tapsiforme*.

For "*Rhæas*" in the name *Papaver Rhæas*, *Rhæas* appears in the errata not as an error, but as the corrected form. The former is the spelling commonly adopted, for which there are doubtless sufficient etymological reasons.

We are pleased to see *Heleocharis* printed for our *Eleocharis*, which British botanists pertinaciously print against all sense and grammar. On the principles of the London dialect, the latter form is defensible. A genuine Cockney aspirates all words beginning with a vowel, and also omits the aspiration of all words beginning with an *h*. According to this practice, *Eleocharis* is *Heleocharis*, and the Belgian *Heleocharis* would be *Eleocharis*, as pronounced by a Londoner.

In this excellent manual of Belgian botany, there are two subjects omitted, not accidentally, but on purpose. One is the duration, and the other is the time, of the flowering of plants. Both these points are well worked out in Cosson and Germain's complete work on the plants growing in the environs of Paris. It is probably true, as has often been remarked, that these subjects are occasionally inadequately or erroneously treated; still they are missed, and we would rather see these statements improved than abandoned. Imperfect information is preferable to none at all, as "half a loaf is better than no bread." A map would also be a desirable accompaniment to this Flora, but we cannot have everything, and we are rather disposed to thank the author for what he has given us, than to grumble because we have not got more.

M. Crépin's work is not only a complete *précis* or *résumé* or epitome of all that was known about the plants of Belgium, but there are, it is believed, some not inconsiderable additions contributed to the common fund of botanical information. Two new forms or species of *Hieracium* have been observed in Belgium which is not particularly rich in plants of this genus; one of these has been distributed under the name *H. mosanum*, and further notice of it is to be expected. *Bromus* has also received no little portion of our author's labours, and it is hoped that he will embody his *own* discoveries and contributions to the science in a form in which it could be published in the 'Phytologist,'

for the information of British botanists. It has already been observed that there is a great resemblance between the plants of the two kingdoms.

In conclusion, it only remains for us to inform our readers that this manual of the plants of Belgium is the *beau idéal* of a local or national Flora. It is comprehensive, concise, clear, and simple. Beginners, whether young or old, will find everything in it necessary for the successful prosecution of the study. They will require no other book for the first or second season of their botanical researches. There is contained within a small space a large amount of valuable information. The definitions hold the *juste milieu* between prolixity and obscurity. No praise should be awarded to a French author for precision and clearness, for these are only the national characteristics both of the writers and of their language and proper diction. *Ce n'est pas clair, ce n'est pas français*, is a maxim applicable to this language, *par excellence*, or *κατ' ἐξοχὴν*, as a Greek would express it. The French excel all other authors in epitomizing, in giving a distinct outline or a clear notion of a subject. Our author has both well and wisely executed his task, and he will doubtless receive the gratitude of his compatriots, and, we hope, also better proofs of their obligations than such praise, honest though it be, as he is invited to accept from the candid reviewer of his valuable work.

The Natural History Review. January, 1860. London:
Williams and Norgate.

In this number of the Review there appears a notice, and also long extracts from a valuable publication on the Meteorology of Swaffham Bulbeck, a village and parish seven miles east-north-east of Cambridge, by the Rev. Leonard Jenyns, M.A., a work which appears to be a valuable contribution to our knowledge of climate. It is to be hoped that clergymen in other and distant parts of the kingdom will follow Mr. Jenyns's good example in publishing the result of their observations on this subject.

When the popular notions about the influence which the moon exerts on the weather, is considered, it may be admitted that more information about the vicissitudes of cold and heat, rainy

and fair weather, storms and calms, may not be superfluous. Some of the ancients believed that certain signs of changes might be inferred from the appearance of Apollo's sister. "Luna dabit signa," wrote Virgil twenty centuries ago. Some one wrote "Luna regit menses" (the moon rules the months). But many moderns affirm that the moon rules the weather,—that changes of weather are as consequent on the change of the moon as effect is on cause. Also it is confidently asserted that the moon at her rising brings frost with her at certain periods of the year, and at particular periods of her course.

Facts, and facts alone, will rectify the popular belief. People will not be reasoned out of their faith in the moon's influence over the atmosphere. The meteorologist who publishes facts can alone accomplish this feat. He tells us on experience, observation, and testimony, that the state of the atmosphere and its changes, viz. the weather, depends on the winds, the proximity of oceans, seas, currents, mountains, plains, disturbance of the balance existing between the electricity of the atmosphere and that of the earth. The believers in the moon's influence may scorn his arguments, but they cannot gainsay his facts. The science of meteorology rests on observation. The meteorologist can establish by the result of his own observations, or by the published testimony of others, that on one given day in the year there was continuous rain for many hours on the western side of Helvellyn, while at the same time not a drop fell on the eastern base of the mountain; he may say it would surely be absurd to admit that the moon caused fair weather on one side and foul on the other. On the great desert of Sahara, where there is never a drop of rain, the same moon shines, which enlightens the gloomy regions of the Ebudæ, the lands of Macallum More, Argyle, etc., where the weather has the reputation of rain, rain, incessant rain, except when it snows.

Temperature has confessedly a very important influence on vegetation. Nobody denies this. But few, we opine, besides the meteorologist is aware of the range of temperature to which both animal and vegetable life are subject, and which they can endure and still retain their vitality.

The *larvæ* and *chrysales* of many lepidopterous insects exist during the severest cold. Some seeds of plants resist a greater degree of cold than others can. Mr. Jenyns gives an example

of the maximum range occurring on *one* day as upwards of 100° . He states that the extreme points in one month (June) have been recorded 143° maximum, $29\frac{1}{2}^{\circ}$ minimum, and says it is quite possible for these two extremes to happen in the space of twenty-four hours, or rather, in the space of twelve hours, for the maximum is usually about two or 5 P.M., and the minimum about an hour before sun-rising. Have these extremes ever been observed in one day? Is there any record of such observation? If there be not, though it may be admitted that it is possible, is it probable?

Mr. Jenyns states that the mean annual temperature of Swaffham Bulbeck is 49° , and that it is only half a degree lower than the mean temperature of London, which in Daniel's tables is entered at $49^{\circ} 5''$.

"In the last chapter of his work the reverend author sums up the result of all his observations on the climate of Cambridgeshire, concluding with a calendar of periodic phenomena in the Vegetable Kingdom, extracted from a larger work on the subject, viz. 'Observations in Natural History,' etc. For this calendar, the reader is referred to the work itself."

The following account of the malaria prevalent in summer in the fens is interesting both in a botanical and sanatorial view. These fens are unenclosed and undrained, to promote the accumulation of peat, which is used as fuel in these parts; and some part of it was, not many years ago, brought to London for sale. Mr. Jenyns writes—

"Among the vegetation with which the peat holes or pits are gradually filled up are certain species of *Chara* and *Potamogeton*, which abound more than any others, and the first of these especially is well adapted for causing a rapid accumulation of vegetable remains at the bottom of the pits by the constant decay of the lower part of its stem, while its upper extremity continues to make fresh shoots. From this circumstance there is soon formed a decomposing mass, which, as the heat of summer partially dries up the water, is exposed to the atmosphere, emitting the most offensive effluvium. I believe these to be the plants which, during the putrefactive process, mainly contribute to the miasma that arises from the Cambridgeshire fens."

In process of time these give places to Rushes, Sedges, Grasses, and other aquatic plants, which rapidly fill up the pits.

In hot weather the winds that blow over these bogs, more or

less filled with putrefying vegetation, convey the noxious influences complained of in these and similar localities. These effects are, however, gradually diminishing. Peat is not so profitable as cereal crops, for which drainage is essential. As cultivation extends, malaria will disappear.

The calendar of natural phenomena will be interesting to the readers of White's 'Natural History of Selborne' and to the admirers of such works as Forster's 'Perennial Calendar.'

In this, the January number of the 'Natural History Review,' there is printed, p. 36, 'Proceedings of Societies,' a paper on the FERNS of West Clare, by F. J. Foot, Geological Survey, Ireland. A few extracts from this account of Irish Ferns may be of some interest to readers on this (the eastern) side of St. George's Sea and the Irish Channel.

Mr. Foot enters several of his observations as "discoveries;" for example, the following:—

"I had the good fortune to discover *Polypodium Phegopteris* last spring at a waterfall, Glenageer. It grows luxuriantly under the projecting ledge of rock which forms the fall, accompanied by *Osmunda regalis* and *Lastrea recurva*."

In the following paragraph he adds—

"This graceful Fern grows in quantities in almost every ravine in the coal-measure formation. It seems to prefer shady places, but it may often be met with on the most exposed bogs."

The author also observed a very popular variety of *Polystichum angulare*, by some authors named *proliferum*, said to have been found at Wimbledon and other places in England by Mr. Wollaston (p. 37). Mr. Foot describes the plant, and further states that it is identical with plants cultivated in the Botanic Garden, Glasnevin, called *discretum*; further, that it is the *angustatum* of collectors.

We have seen very large specimens of *Asplenium marinum* from Madeira, and they are equalled, if not exceeded, by the Irish plants.

"The localities are Aylevaroo, Kilrush (seashore generally), Mutton Island, Ballynalackan, roadside between Listoon Varna and Blackhead. It grows in vertical clefts, which are open joints in the limestone rock. It attains sometimes to a height of three feet, or, in fact, the depth of the clefts, as the top of the frond always reaches the surface. I was so struck

with their size and luxuriance that I sent up plants to my father, who immediately brought some specimens to Mr. Moore at the Botanic Gardens. They both remarked the strong resemblance in form and size borne by the Ballynalackan plants to the West Indian Fern *Asplenium latum*, and as yet they have not been able to detect any difference between them. It will be an interesting fact if it can be shown that this plant is identical with *A. latum*, and that the latter is nothing more than *A. marinum* growing under circumstances particularly favourable to its development.

"*Ceterach officinarum*. Generally abundant. On the table are some dried specimens of a variety of this Fern, abundant in the Ennis neighbourhood. The fronds are often as long as twelve or eighteen inches, pinnate, with margin deeply serrated."

This is the variety *crenatum*. See Moore's 'Handbook,' p. 215. Mr. Sim, in his Catalogue, p. 9, notes that "the recorded British variations of this Fern are omitted because inconstant."

The following notice of *Adiantum Capillus-Veneris* will gratify such botanists as fear that the general popularity of this tribe of plants and the eagerness of collectors to possess them will speedily cause the extirpation of the rarer kinds.

"I cannot describe my delight when Dr. O'Brien first brought me to the spot (Ballynalackan, where this elegant Fern grows). The cliffs are formed of horizontal beds of limestone, and on the vertical face of these cliffs, in the clefts or interstices between the beds, this most exquisite of all the Ferns grows in its glory; in fact, for a distance of fully half a mile, if not more, the stratification of the rocks is distinctly marked by the peculiar green hue of *Adiantum Capillus-Veneris*. Between this and the sea almost every vertical fissure in the flat bed of rock over which we walked was filled with this Fern, and on the seaside of the road it is associated with the gigantic *Asplenium marinum* above described."

Walking on the vertical face of a rock must have been rather a feat even for Irish botanists.

The author of this paper informs his readers "that all the Wardian cases in Great Britain might be well supplied with *Adiantum Capillus-Veneris* from Ballynalackan, and what was taken would hardly be missed."

Lately there has been much controversy in Dublin about the specific distinctness of *Hymenophyllum tunbridgense* and *H. Wilsoni*, or *H. unilaterale*, and the following is recorded by Mr. Foot:—

"*H. Wilsoni* is found growing on exposed cliffs of Old Red Sandstone

intermixed with *H. tunbridgense*. In this locality and that at Castle Waller the Filmy Ferns strictly confine themselves to the Old Red Sandstone grits which here overlie the Silurian slates. This is very remarkable sometimes, as the grits are only a few inches thick; and as regards exposure, etc., the slates would seem just as favourable as a habitat. It is worth inquiring whether these plants are geological in their distribution, or not."

Professor R. W. Smith at the same meeting reported that in a limited area he had collected twenty-seven species of Ferns (we wish the Professor had informed us what is the extent of this limited area). The following are the names of species communicated, viz. *Hymenophyllum tunbridgense*, *H. Wilsoni*, *Cystopteris fragilis*, *C. dentata*, *Asplenium viride*, *A. Adiantum-nigrum*, *A. Trichomanes*, *A. Ruta-muraria*, *Ceterach officinarum*, *Lastrea Oreopteris*, *L. recurva*, *Polypodium Phegopteris*, *Lastrea spinosa*, *L. uliginosa*, *L. rigidum* (? *rigida*); one of these, *L. uliginosa*, recorded as Irish for the first time; *Polypodium vulgare*, *Ophioglossum vulgatum*, *Osmunda regalis*, *Scolopendrium vulgare*, var. *multifidum*, *Blechnum boreale*, *Polystichum angulare*, *P. aculeatum*, *Lastrea dilatata*, *L. Filix-mas* (*affinis* and *Boreri*), *Athyrium Filix-fœmina* (var. *incisum* and *convexum*), *Pteris aquilina*, *Polystichum angulare*, var. *grandidens*.

There are other learned papers in this number of the Review, but our space is exhausted.

Catalogus Plantarum in Algeria sponte nascentium. Auctore G. MUNBY. Oran, 1852. London: W. Pamplin, 45, Frith Street, Soho Square.

Another botanical work, also by a French author, on north African botany, has just been received, one *tout à fait* different from the 'Manuel' just noticed. Still there are considerable resemblances between both the Belgian and British Floras and that of the north of Africa, though the regions of Algeria and Barbary are very remote from the British Isles. The centre of Great Britain is just 20° north of the centre of the tract botanized by M. Munby, and the centre of Belgium is only about 12½° north of Algeria. Yet it is believed that there are common to Algiers and England, many more plants than there are common to the former and Belgium.

The 'Flore de l'Algérie,' published in 1847, by the author of the present Catalogue, comprehended about 1,800 species; this new list comprehends at least 2,600. The extent of the country from which this result is obtained is larger than the area of France, which produces about twice as many species as Algeria does. In France the vegetation is more varied and abundant than in the north of Africa, and this is probably owing to the diversity of surface, to atmospheric variations, greater range of altitude, etc.

The representatives of the European Flora, or the species common to both quarters, attain their maximum at Bonn, and decrease towards the west. The most intimate relations of this Flora are with the Floras of Spain, Portugal, and the south and middle of France.

The plants common to the Algerine and British Floras are, in round numbers, about 550, or somewhat more than one-third of our species are common both to the north of Africa and to the British Isles. Several of these, such as *Adonis autumnalis*, *Delphinium Ajacis* (*Consolida* ?), *Sinapis nigra*, *Thlaspi perfoliatum*, etc., are naturalized or local species in England, while others, such as *Ranunculus hederaceus*, *R. Flammula*, *R. repens*, *R. bulbosus*, *R. sceleratus*, *Papaver Rhæas*, *P. dubium*, *Fumaria officinalis*, *Thlaspi Bursa-pastoris*, are widely and almost universally distributed over the British Isles.

In the Order *Leguminiferae*, 52 species, enumerated in M. Munby's catalogue, are found here, either as unquestioned natives, or as naturalized species, or as stragglers. Of the Order *Cruciferae* 27 are common to both Floras. Of the Order *Umbelliferae* 22 species are common. In *Compositae* about 40 species are common. Nearly 60 species of *Gramineae* are found in both Great Britain and Algeria.

In the Flora of Belgium, the number of *Leguminiferae* common to both the north African Flora and to the before-mentioned, is about 30, the Crucifers are about 20, the Umbellifers 15, the compound plants 32, and the *Gramineae* 47. These statements of the relative proportions of some of the chief botanical Orders in Algiers, England, and Belgium, will bear out the assumption that there are more plants common both to the north of Africa and to the British Isles, than there are common to the former and Belgium.

It is not very difficult to give a moderately feasible account of the migration of these species and their settlement in this country. They probably came with agricultural produce, as the Wandsworth plants certainly did, or they were imported with merchandise, or by some accident—a wide word, comprehending many ways too numerous and too uncertain to be particularly pointed out here. If it be asked, Why did not the same causes produce the same effects in Belgium? it may be replied, that the winter temperature is too low in the north of France and Belgium to permit these natives of a southern clime to effect a settlement in these quarters.

The climate of England is unusually mild, owing to the gulf-stream, our insular position, sheltered situation in divers places under hills and mountains. Hence many species gain a footing here which could not exist in Continental parts of the same latitude. And hence, also, the Flora of the British Isles is continually increasing.

This work of Mr. Munby's is a mere catalogue, consisting of about two sheets, or double the size of the 'London List of British Plants.' It contains the orders, genera, and species, with authorities for the specific, generic, and ordinal names. Here and there a synonym is added, but no indications of the habit, habitat, range, or census of the species. These particulars would probably have entailed more labour on the compiler than he could have afforded for the small remuneration afforded by the sale of such works.

In a supplement the following rare and common British species appear, viz. *Thlaspi arvense*, *Isatis tinctoria*, *Linum usitatissimum*, *Geum urbanum*, *Prunus insititia*, *Borago officinalis*, *Teucrium Chamædrys*, *Daphne Laureola*, *Buxus sempervirens*, *Ornithogalum umbellatum*, *Neottia spiralis*; these are additional examples of the relationship existing between the Floras of Britain and Algeria. Thanks are tendered to M. Munby for his enlarged list of north African plants, and it is respectfully recommended to the readers of the 'Phytologist.'

BOTANICAL NOTES, NOTICES, AND QUERIES.

VALUE OF THE PALM-TREE.

A correspondent of the *West African Herald* forwards the following information relative to the uses of different portions of the Palm-tree:—"First, the roots are used for various sorts of medicines, but chiefly for medicines to cure bilious attacks. Secondly, the branches are used for purposes of fencing yards, fields, etc., also for torches, and for smoking their dried fish. The leaves are made into brooms for sweeping, and likewise into twine. The tree itself produces the nut, which yields the valuable oil known as palm-oil. The kernel of this nut produces two different kinds of oil, one sort white, and the other brown. The palm-oil of commerce is sold to the traders; and it is also greatly used among the natives for various purposes—as for making native soap and burning in lamps. It is used in cooking. It is also an excellent medicine. In some diseases (most especially small-pox), this oil is administered internally as well as externally. It is used for wounds and bruises and burns. In cases of guinea-worm it is applied as a poultice. The white oil of the kernel is used for the same purposes as palm-oil. In some parts of West Africa, however, it is not eaten. Not much of it is made on the Gold Coast. None is sold to traders, all that is made being specially made for our own consumption. The brown oil of the kernel has also the same properties, and is of course applied to the same uses as the white. I shall in another paper explain the way in which these oils are manufactured. The nuts from which palm-oil is expressed are made into beads after that process has been gone through. The tree also produces a delicious beverage called palm wine. After the wine has all been extracted, and the tree is apparently dead, there come out of the trunk Mushrooms, and likewise a quantity of large, white, fat maggots, considered by some of the natives a delicious article of food."

SPEARWORT.

In a curious old and rare work called 'A Caveat for common Cursetors,' printed in 1566, by Thomas Harman, under 'Pallyards,' chap. 7, he says:—"All for ye most part of these will either lay to their legs an herbe called *spere wort*, either arsnicke, which is ratesbane. The nature of this spere-worte will raise a great blyster in a night upon the soundest part of his body; and if ye same be taken away, it will dry up again, and no harme."

Query,—Is this the *Ranunculus Flammula*?

SHAMROCK.

Dr. Threlkeld, in his 'Synopsis Stirpium Hibernicarum,' gives the following: *Trifolium pratense album*, white-flowered Meadow Trefoil.

The Meadow Trefoils are called in Irish 'Shamrocke,' as Gerard writes, in his 'Herbal,' which was first published in 1597; the editions after being 1633 and 1636; the words 'Seamaur Leaune' and 'Seamar-oge' being in signification the same, the first signifying the *Child's Trefoil*, the other the

Young Trefoyl, to distinguish them from the 'Seamar Capuil,' or Horse Trefoyl, as I suppose.

This plant is worn by the people in their hats upon the seventeenth day of March yearly (which is called St. Patrick's Day), it being a current tradition that by this three-leaved grass he emblematically set forth to them the *Mystery of the Holy Trinity*. However that be, when they wet their 'Seamar-oge,' they often commit excess in liquor, which is not a right keeping of a day to the Lord, error generally leading to debauchery.

H. B.

HEMLOCK, OR HUMLOCKE.

So called by William Bullein, Doctor of Physic, who wrote in 1562; also *Cicuta*, and by the Greeks *Koneion*, that is to say, a *Tiraunt*, or killer of men. He alludes to the poisoning of Socrates with this plant, *by his cruel murderers* of Athens, and concludes by saying, "*And thus I end of this venomous herbe*, which here in England women used to bucke their cloths with, and weavers do make quilles upon their stalkes, which bee called kexes."

This plant, according to Côtgrave, was called *Herb-Bennet*.

The particular use of this plant by women and weavers, as mentioned above, I should like to see explained.

H. B.

HERB-TRINITY. HEARTSEASE. BAUSEY.

Bullein, in his 'Book of Simples,' says:—"This herb is called *Herb Trinitatis*, but I read in an old monkish-written herball, wherein the author writeth that this herb did signifie the Holy Trinity, and, therefore, was called the herbe of the Trinity, and thus he made his allegory. This flower is but one in which, said he, are three sondry colours, and yet but one sweet savour. So God is three distinct persons in one undivided Trinity, united together in one eternal glory and divine majesty. The old pagan writers did call it Jupiter's herbe, because of the beauty of its colours."

S. B.

WHAT IS PSYLLIUM?

Bullein says *Psyllium* is called Flea-wort, "bicause the seede is like to flees, blacke and hard, which flees in the North Countrey bee called loppes. If this herbe is cast greene in any house, no flees will remayne there. The juyce with honey dropped into the eare, will kyll wormes, or any flee copen therein, and thus mutch affyrme Dioscorides and Pliny of this herbe."

H. B.

POTAMOGETON GRAMINEUS.

I beg to inform the readers of the 'Phytologist' that a Pondweed under this name *was* gathered by me in 1858, but I disclaim the merit of being the first to find it in this neighbourhood. It was found by Miss Cookson, of Grasmere. It grows here very abundantly. I very innocently sent it to Mr. Hunt as *P. gramineus*, because I had Mr. C. C. Babington's authority for it. But Mr. Babington has since entertained doubts about it. He wished for ripe fruit, which I sent him. When I

have learnt his decision, the readers of the 'Phytologist' shall know it. Meanwhile, I shall be glad to send specimens to any person who feels himself competent to assign to it its proper name.

Grasmere.

EDWIN GREEN.

FLEUR-DE-LIS, OR FLOWER-DE-LIS.

In Webster's Dictionary of the English Language he says :—"This is the Iris, a genus of monogynian trianders, called also Flag-flower, and often written incorrectly 'Flower-de-Luce.' The species are numerous."

I wish to know what particular kind of Iris, or other flower, was originally named Fleur-de-Lis, and at what period it was first used in heraldry, and the meaning thereof.

The figure we see on ancient shields and in coats-of-arms (called Fleur-de-Lis) is more like to the head of a spear than a flower, even the Lily or Iris; and I think it more resembles the leaf of some species of Trefoil, which it may have been originally intended for, as emblematic of the Trinity.

S. B.

ADDITIONAL DEVONSHIRE PLANTS.

Cerastium pumilum, Daddy-hole Plain, near Torquay, Mr. Townsend. *Sedum rupestre*, Lynton, and all along the coast as far as Culbone, T. B. Flower.

Note.—Sea Kale, *Crambe maritima*, was first cultivated in 1795, and the plants were originally obtained from Slapton Sands, Devon.

MUNIFICENT BEQUEST.

The late Adam F. Weston, Esq., of Bombay, has left the sum of £160,000 to the town of Northallerton, Yorkshire, of which he was a native. The object is to found a botanical museum for the Northern Counties, of which he directs that his nephew, Mr. Clennishaw, shall be the first curator.

Can any of our Yorkshire readers tell us what truth there is in the above scrap of good news?

Communications have been received from

Rev. T. F. Ravenshaw; J. S. M.; Sidney Beisly; Mrs. Tyrrell; John Sim; J. Jerdon; C. H. Johnson; A. G. More; Mrs. Merrifield; Robert Austen; W. W. Reves; William Pamplin; T. W. Gissing; W. P.; A.; W. W. R.; S. B.; H. B.; Edwin Green.

SPRING FLOWERS OF THE SOUTH OF EUROPE.

Remarks on some of the Spring Flowers of the South of Europe, and on their representatives in the British Isles.

The English botanist who has resided or travelled in the countries of southern Europe, and has filled his herbarium with the treasures of their copious Flora, must often have thought, with almost envious regret, of the comparative poverty of our own. But as we have no power to change the lot which in this matter the general arrangements of Nature have assigned to us, we shall do well to look at its brighter side, and find matter for congratulation in some points of superiority which our indigenous Flora, meagre though it be in comparison with those of France and Italy, nevertheless possesses over the richest regions of the basin of the Mediterranean. Two of these points have particularly impressed me in the course of a tolerably extensive wandering over the south of Europe, and I will communicate them here for the benefit of those who may not already have adverted to them.

The first is our pre-eminence in Ferns. Though the species of Phænogamous plants in (for instance) the French Flora, outnumber ours almost in the ratio of four to one, the species of Ferns in the two countries are about equally numerous, and indeed nearly identical. In the excellent Flora of MM. Grenier and Godron the only Ferns which are not (under the same or some other name) included in the fourth edition of Mr. Babington's 'Manual,' are two *Nothoclæna*, *N. Marantæ* and *vellea* (the last found only in Corsica), *Pteris cretica* (also confined to Corsica), *Cheilanthes odora*, and *Scolopendrium Hemionitis*. Two more, *Ophioglossum lusitanicum* and *Grammitis leptophylla*, are, as British plants, limited to the Channel Islands. On the other hand, *Lastrea Fæniseeii*, *Hymenophyllum Wilsoni*, and *Trichomanes radicans*, among the most precious of our ferny treasures, have not hitherto been discovered in France. We are thus scarcely outnumbered in species of Ferns by the whole of France, Corsica included. But when we compare this country, not with all France, but with the part of it which in most branches of botany we have greatest reason to envy,—the Mediterranean provinces,—we find that they, in this particular department, have cause to envy *us*, their powerful sun and dry atmosphere, to which they owe their

vegetable riches, being unfavourable to the growth of nearly all the more beautiful Ferns. It is only the damper, Atlantic provinces of France, the west and north-west, which offer any parallel in this particular to our green commons and moist hedgesides. Our numerous Lastreas, our Lady-Fern, our Polystichums, our Blechnum, our Osmunda, in the true South are scarcely to be met with out of the mountains. Our Sussex *Hymenophyllum*, except an indication in Corsica, is known as a French plant solely in Brittany. Even our common Brake, the *Pteris aquilina*, is rarely met with in the plains of the Mediterranean region. The only Ferns which are at all widely diffused in that portion of France, are the Ceterach, which, as in our western counties, abounds on walls and rocks; the commoner Aspleniums (*Trichomanes*, *Ruta-muraria*, and *Adiantum-nigrum*), the universal *Polypodium vulgare*, and, most beautiful of all, the Maidenhair, *Adiantum Capillus-Veneris*, which haunts the spray of falling water, and lines all cavities which combine dampness with depth of shade. Here, then, is one of the loveliest families of the Vegetable Kingdom, one of those which by their verdure, grace, and conspicuousness, and by their abundance in climates suited to them, do most to beautify the face of nature, and in which the opulent South cannot be for a moment compared in wealth with our modest northern latitudes.

Another advantage which we possess, and which has not perhaps been so much remarked upon, is our striking superiority over the South, considered generally, in the flowery beauty of our spring. We are indeed greatly surpassed in the mere number of species which flower at that, as at every other season. But the multitude and splendour of gregarious flowering plants which constitute the floral brilliancy of the South, and to which our mild summer can show nothing comparable, does not really begin until the *Cisti* are in bloom. Nearly the whole glory of an English April and May is derived from plants which, universal with us, are scarcely, or not all, known in the South, except as mountain plants. We may count on our fingers the few ornaments of our spring which are common to us with the Mediterranean provinces of France. They possess the Celandine and the Sweet Violet in abundance. They have our Daisy, and our three common Buttercups, *R. repens*, *R. acris*, and *R. bulbosus*. *Cardamine pratensis* is found, but not, as with us, in almost every wood

or hedge; only in irrigated meadows and by the sides of streams. Our common *Symphytum* abounds, and so does the common *Polygala*; and, best of all, the Blackthorn and the Whitethorn are as much at home in their hedges and thickets as in ours. Now, however, I am at the end of the list. I do not believe I have omitted anything of importance. On the other hand, mark the catalogue of our spring plants which (except in the mountains, or in some very peculiar localities) do not grow in the southern countries of Europe.

Of wood plants they have neither our Wood Anemone (*A. nemorosa*), nor our Wood Sorrel (*Oxalis Acetosella*), nor our Woodruff (*Asperula odorata*), nor our Primrose (*Primula vulgaris*), nor our Hyacinth (*Endymion nutans*), nor our Lily-of-the-valley (*Convallaria majalis*), nor the graceful *Adoxa Moschatellina*, nor the beautiful *Allium ursinum*. Of meadow plants they want the Cowslip (*Primula veris*), the Daffodil (*Narcissus Pseudo-narcissus*), the Marsh Marigold (*Caltha palustris*), and both our early Orchides, *O. mascula* and *O. Morio*. Of the plants which adorn our hedges and banks, they have neither the Wood Violet (*V. canina*, or *V. sylvatica*), the wild Strawberry (*Fragaria vesca*), the delicate *Ranunculus auricomus*, the elegant white *Potentilla Fragariastrum*, the starry *Stellaria Holostea*, the fragrant Ground-ivy (*Nepeta Glechoma*), the cheerful *Mercurialis perennis*, nor the bright-eyed Germander Speedwell (*Veronica Chamædrys*). There are but few of our water plants which flower in spring, but they want the loveliest of these, *Hottonia palustris*. Of early heath plants they have neither our Bilberry (*Vaccinium Myrtillus*), nor our brightly coloured *Pedicularis sylvatica*. Among flowering trees they have not at all, or but rarely, either the Crab-apple (*Pyrus Malus*) or the splendid White Beam-tree of our chalk-hills, the *Pyrus Aria*. A still greater deficiency is the absence of the two plants which by their masses of deep yellow, convert many of our spring landscapes into the likeness of Turner's pictures—the Furze (*Ulex europæus*) and Broom (*Sarothamnus scoparius*). The former they do not possess at all, the latter nowhere in the plains, except occasionally about the roots of the mountain ranges.

It will be said, if they have not these plants, they have equivalents: and this is true, but the equivalents are seldom equally beautiful, and scarcely ever so abundant and so universal. The case of the Anemones is one of the most favourable which can be

cited. The equivalent of *Anemone nemorosa* in central Italy is *A. apennina*, one of the doubtful plants of our Flora ; and this is certainly as beautiful and nearly as abundant, where it prevails, as *A. nemorosa*, but it prevails only in a limited range. In southern Italy the place is occupied by the starlike *A. hortensis*. But neither of these is found, except as a rarity, in the south of France. The blue and red Anemone of our gardens, *A. coronaria*, is the most widely diffused of all the Anemones of the South, and in the places where it is most abundant, it is one of the most gorgeous flowers of the year. But this, though commoner than the two others, is but partially distributed in Mediterranean France. The substitutes for our Broom and Furze are much more inadequate. There is a small Furze, *Ulex provincialis*, (*parviflorus* of Grenier and Godron,) extremely local in its distribution, neither so large nor so beautiful as our dwarf Furze, and which can at most be allowed to pair off with *Genista anglica*. In almost every part of Europe, however, there is some prickly Leguminous plant, which in early spring colours the landscape with its yellow blossoms. In Sicily it is *Calycotome spinosa*, formerly a *Cytisus*. In the south of France and the neighbouring provinces of Spain, it is *Genista Scorpius*, a low bush, whose thorny branches, spreading on every side, are very rough to handle. Later in the year those regions are dotted over with the stately and powerfully fragrant *Spartium junceum*, the Spanish Broom of our gardens ; but this is a summer ornament, a plant of the Cistine period. Still later the *Genista tinctoria* displays itself with a beauty and luxuriance far greater than in our colder climate. Advancing from the plains to the mountain regions of the Cevennes and the eastern Pyrenees, and leaving the *Spartium junceum* at their foot, we come first upon the English Broom in the lower zone of the mountains, among the Chestnut and Beech woods ; then, above these, another Broom, more bushy, tougher, coarser, but still beautiful, *Sarothamnus purgans*. All these plants are highly gregarious, and colour great spaces of country in a similar manner to our Furze and Broom ; but, if we except *S. junceum*, they are far inferior. Not one of them has either the height, the size of flowers, the delicate enamel-like polish of corolla, nor combines so rich a verdure with its golden inflorescence, as those matchless ornaments of our spring.

The *Narcissi* are perhaps the greatest riches of the vernal meadows in the South. The Daffodil is indeed absent, but *N. poeticus* is frequent, though nowhere but in the mountains have I seen it in any profusion: the meadows of the Pyrenees are positively white with its blossoms. Some of the many-flowered species of this genus are met with in the plains; in some localities *N. Tazetta* is frequent; the gorgeous *N. stellatus*, or *orientalis*, is found in others; and there is a *Narcissus* near Naples—probably *N. serotinus*—in flower all the winter, and with which I have seen the plain of Pæstum quite covered in February. All these, however, are very local. *Veronica Teucrium* comes near in beauty to *V. Chamædryas*, but is scarcely equal to it, and not nearly so universal. *Oxalis corniculata* (itself a British plant) is a poor substitute for *Oxalis Acetosella*; while, for the Primrose, Cowslip, Hyacinth, Woodruff, and Lily-of-the-valley, there is no equivalent at all. When we consider the exquisite beauty of all these, and the immense abundance of the three first in almost all neighbourhoods, and of the two last in some, the assertion will not appear paradoxical that the South, with all its number and variety of species, is on the whole poorer in those flowering plants which make spring beautiful, than our otherwise less favoured botanical region of the earth.

In what precedes, I have been speaking of the south of Europe generally. But there are particular places in it which, from local circumstances, combine much of the character of northern vegetation with that of the more sunny regions which surround them, and these places are the paradise of the botanist, as they are of the lover of Nature. I will endeavour to give an account of one of these, and will begin by describing its situation, since this determines the main peculiarities of its botanical character, and the richest Flora is almost always found among the most splendid scenery.

Whoever has been at Rome is familiar with at least the appearance of the group of noble though not very lofty mountains (for, indeed, it is visible from many streets of the city,) which stands isolated at some distance from the sea on one side, and from the mountain barrier of the Campagna on the other, and is the delight of painters by the aerial purple tint with which it fills up one-half of the southern side of the landscape. Almost all the part of these mountains which is visible from Rome is

clothed with thick forests, but nearly their whole base on the northern and western sides is studded, at a small elevation above the plain, with a succession of small towns which, and their neighbourhood, are the resort of the richer Romans and resident foreigners during the unhealthy season. Omitting Frascati and other places which face to the north, the western base is occupied by Albano, La Riccia, and Gensano: Albano, which forms the angular point, being alone visible from Rome. Both in scenery and in vegetation this place, more, perhaps, than any other in Italy, combines the peculiar character and features of southern Europe with a large share of those of England. Its elevation is sufficient to command the whole breadth of the Campagna, and a considerable space of sea beyond. The view from the western side of the town has the solemn, though not sombre, but cheerful, stateliness characteristic of Italian landscape, while on the land side the forests range from the summits of the mountains to the very border of the town, and on the boundary which separates the two regions, an avenue of full-grown forest trees, so rare in most parts of the Continent, stretches along the whole length of the winding road leading from Albano to the beautiful village of Castel Gandolfo, situated on the rim of the crater which holds the blue volcanic lake of Albano. Beyond Castel Gandolfo are grassy downs, which combine with the forest to produce the likeness of verdant England in the centre of Italy, and the resemblance extends to botany as well as to scenery. The spring Flora of this region is of an almost English character, though the particular species are mostly such as are either rare, or do not grow at all in England. On the downs of Castel Gandolfo are found *Hesperis* (now *Arabis*) *verna*, with its flower resembling Virginia Stock, and one of the most graceful of the *Irides*, *I. tuberosa*. Along the circuit of the lake, *Lunaria biennis*, the "Honesty" of our cottage-gardens, exhibits its lilac, cross-like flowers, and its large, flat, almost nummular, pods. Nearer to the town, *Lithospermum purpureo-cæruleum* puts forth its bright, metallic-looking blossoms. The woods abound with the yellow *Anemone ranunculoides*; the light-blue *Scilla bifolia*, with its hyacinth-like leaves; *Pulmonaria officinalis*, another plant of cottage-gardens, and indigenous in England, with its flowers of various hues on the same stalk, and its broadly-spotted leaves; the snowy *Allium pendulinum*; the rarer of our two species of

Solomon's-seal (*Convallaria multiflora*) ; one of the smaller *Aristolochiæ* (*A. longa*) ; the four-whorled and delicate-leaved *Asperula taurina*, a plant of the Alps ; and the smaller of the two English *Symphyta*, *S. tuberosum*. Further on in the woods, towards La Riccia, we meet with *Narcissus poeticus*. Further still, near Gensano, we come upon the Bladder-nut of our shrubberies, *Staphylea pinnata* ; *Dentaria bulbifera*, one of the finest of our rarer indigenous plants ; and the blue Iris of our gardens, *I. germanica*. If we would ascend the highest member of the mountain-group, the Monte Cavo, we must make the circuit of the north flank of the mountains by Marino, on the edge of the Alban Lake, and Rocca di Papa, a picturesque village in the hollow mountain-side, from which we climb through woods abounding in *Galanthus nivalis* and *Corydalis cava*, to that summit which was the *arx* of Jupiter Latialis, and to which the thirty Latian cities ascended in solemn procession to offer their annual sacrifice. The place is now occupied by a convent, under the wall of which I gathered *Ornithogalum nutans*, and from its neighbourhood I enjoyed a panoramic view, surely the most glorious, in its combination of natural beauty and grandeur of historical recollections, to be found anywhere on earth.

The eye ranged from Terracina on one side to Veii on the other, and beyond Veii to the hills of Sutrium and Nepete, once covered by the Ciminian forests, then deemed an impenetrable barrier between the interior of Etruria and Rome. Below my feet, the Alban mountain, with all its forest-covered folds, and in one of them the dark-blue lake of Nemi : that of Albano, I think, was invisible. To the north, in the dim distance, the Eternal City ; to the west, the eternal sea ; for eastern boundary, the long line of Sabine mountains, from Soracte, past Tibur, and away towards Præneste. The range then passed behind the Alban group, and became invisible, but reappeared to the south-east as the mountain-crescent of Cora and Pometia, enclosing between its horns the Pontine marshes, which lay spread out below as far as the sea-line, extending east and west, from Terracina in the bay of Fondi, the Volscian Anxur, to the angle of the coast where rises suddenly, between the marshes and the sea, the mountain promontory of Circeii, celebrated alike in history and in fable. Within the space visible from this one point the destinies of the human race were decided. It took the Romans

nearly five hundred years to vanquish and incorporate the warlike tribes who inhabited that narrow tract, but this being accomplished, two hundred more sufficed them to complete the conquest of the world.

J. S. M.

CHAPTERS ON FUNGI.

By ARCHIBALD JERDON.

CHAPTER VI.

The third great Order of the class Fungi is that of CONIOMYCETES, of which the general character is the great predominance of the reproductive bodies, or spores, over the other parts of the plant, so that in fact the whole plant, in many cases, consists almost entirely of an aggregation of spores.

The Order may be divided into two principal groups, the first consisting of those Fungi which grow on dead (or dying) plants, and the second, of those which are parasitic on living plants. These latter, though generally blighting, and at length destroying the plants on which they grow, often impart to them, by their various forms and gay colours, a beauty and interest which they would not otherwise possess. The various diseases of plants, commonly known as blight, rust, and mildew, are caused by Fungi belonging to this Order.

Suborder 1. SPHERONEMEI.

A numerous but obscure group, the general structure of which is an imperfectly developed perithecium, and minute spores borne on sporophores. Many of the so-called species are now supposed to be imperfect states of *Ephæriæ* and other Fungi.

I shall only notice the genus *Septoria*.

SEPTORIA.

Spores fusiform, septate, originating beneath the cuticle, oozing forth.

SEPTORIA ULMI, Kunze. *Elm-leaf Septoria*. Spots brown; heaps of spores small, scattered; spores nearly straight, subquadri-septate.—*Grev. Sc. Crypt. Fl. t. 112*.

On elm-leaves in early autumn, common.

The leaves attacked by this parasite wither, and become yellow or dingy-brown, before their time; and the presence of the Fungus is marked on the upper side of the leaf by scattered spots, of a brownish or blackish colour. On the under side of the leaf the spores ooze forth in the shape of tendrils, and form little white masses, which dissolve, on being placed in water, into numerous oblong, slightly curved spores, which are generally 3- or 4-septate, but sometimes only appear filled with a grumous mass.

Suborder 2. MELANCONIEI.

In this division the spores ooze forth from the receptacle—for there is no real perithecium—and often form black stains on the plant (or substance) on which they grow, or, in other cases, globules or tendrils of various colours. Many of the supposed species, however, have been of late ascertained to be merely states of other Fungi.

I take as an example the genus *Ceuthospora*.

CEUTHOSPORA.

Stroma innate, containing one or more nuclei. Spores minute, escaping from the dissolving nucleus.

CEUTHOSPORA LAURI, SOW. *Cherry-Laurel Ceuthospora*. Unilocular, brownish-black, obtusely conic, splitting into 3–4 acute, erect laciniae.—*Grev. Sc. Crypt. Fl. t. 254*.

On dead leaves of *Prunus Lauro-Cerasus*. Not uncommon in winter and spring, forming little black spots with a whitish centre, and growing indifferently on either side of the leaf affected. The spores, which are very minute, and of an oblong-cylindrical shape, escape from the contained nucleus on the application of moisture.

Suborder 3. PHRAGMOTRICHIAEI.

A small group, with an irregular or obsolete perithecium, and spores generally arranged in moniliform threads, the joints of which separate when mature.

There are few British representatives of this suborder, and the structure of some of them is rather anomalous, as in some instances apparent *asci*, containing the spores, are observed. This is the case in the curious *Bloxamia truncata* described by Messrs. Berkeley and Broome in the ‘Annals and Magazine of Natural History.’

Suborder 4. TORULACEI.

In this group there is no trace of any perithecium whatever, and the plant consists almost wholly of spores, which are generally arranged in erect moniliform chains, separating at the joints. The spores are sometimes simple and sometimes septate.

I shall instance the genus *Torula* as typical of the suborder.

TORULA.

Spores chained together into moniliform, erect flocci, without any common peduncles, filled with a grumous mass.

TORULA ANTENNATA, Pers. *Antennæform Torula*. Spores oval, obtuse at either end; flocci aggregate.—Grev. *Sc. Crypt. Fl. t.* 245.

On stumps and sticks. Not uncommon.

Forming deep black patches, an inch and more in breadth, and which when submitted to the microscope are found to consist of erect threads of oval spores, which become truncate at the ends by separation at the joints. These spores are of a dark-brown colour when viewed as transparent objects.

Sufficiently common on dead sticks and stumps, especially small hazel-stumps. It may be known by its very black line, but all the minute Fungi require the aid of the microscope for their determination.

Suborder 5. PUCCINIACEI.

The Fungi of this division attack living plants, and are distinguished by their elongated septate spores (generally) produced on peduncles.

I shall instance the genera *Aregma* and *Puccinia*.

AREGMA.

Spores moniliform-connate, opaque, with very long, free, pelucid peduncles, at length separating from each other, and containing a single globular mass (*sporule*).

AREGMA MUCRONATUM, Fr. *Rose-leaf Aregma*. Spores 5–7, the terminal one sterile, apiculate; stem slender, incrassated at the base.—Grev. *Sc. Crypt. Fl. t.* 15.

On leaves of various Roses, in fields and gardens. Common in autumn.

Forming little black scattered tufts on the under surface of the

leaf, and consisting of numerous oblong-cylindrical, septate spores, of a dark reddish-brown colour (under the microscope), and supported on whitish stems, which are enlarged at the base.

A common species on leaves of Roses, often growing intermixed with the Rust of Roses (*Uredo Rosæ*). Other species attack the Bramble, the wild Raspberry, etc.

PUCCINIA.

Spores 1-2-septate, adnate with the matrix by a filiform peduncle, which is at first covered by the matrix.

PUCCINIA GRAMINIS, Pers. *Mildew*. Spots pale, diffuse; sori linear, confluent, amphigenous (*i.e.* produced on both sides of the leaf); spores at length black.

On leaves and culms of corn and grasses. Common.

This is the common Mildew. It appears in the form of long black lines, generally on the stalks of grass and corn, particularly wheat, to which it is very injurious. The spores are oblong, uni-septate, and slightly constricted in the middle.

A great number of plants are liable to the attacks of this genus, but the forms it assumes are so similar, that it can hardly be admitted that each particular parasite is a distinct species. In the 'English Flora' a considerable number of species are described, but the differences are so very slight in many cases, that the number might be greatly lessened. In fact it is very difficult to say what a species is in this genus.

Suborder 6. CÆOMACEI.

A large group of Fungi, also attacking living plants, and abundantly diffused everywhere. They consist almost entirely of proportionally large subglobose spores, in most cases without any true peridium, though the epidermis of the plants on which they grow sometimes furnishes a kind of peridium (as in the genus *Æcidium*). In general, however, the cuticle is the only covering, and when it bursts, the spores are exposed in naked masses or sori.

Several diseases of plants, of which the principal are rust, smut, and bunt, are produced by Fungi of this suborder, and are formidable enemies to the farmer. Almost every genus of plants is affected by its peculiar *Uredo* or *Æcidium*; but, as I have remarked under the genus *Puccinia*, it is going too far to make

distinct species of all these parasites, which should rather be considered as varieties of a few principal forms.

I shall take examples from the genera *Æcidium* and *Uredo*.

ÆCIDIUM.

Spores free, contained in a cellular, membranous sac (*pseudoperidium*), distinct from the epidermis, and at length bursting at the apex.

ÆCIDIUM BERBERIDIS, Pers. *Berberry Æcidium*. Spots roundish, bright red; subiculum (thickened part of the leaf) rather thick; pseudoperidia disposed in subrotund or oval patches, often greatly elongated; spores orange.—*Grev. Sc. Crypt. Fl. t. 97*.

On the leaves, peduncles, and sometimes even on the flowers and fruit of the common Berberry.

A common and pretty parasite. The spots on the upper side of the leaves are of a bright red, and the clusters of pseudoperidia which are produced on the under side, are of a fine orange-colour. The pseudoperidia themselves are pale-orange, and cylindrical in form, with the orifice somewhat reflexed and dentate. The contained globular spores are of a darker orange hue.

UREDOS.

Spores free, aggregate, covered by the epidermis of living plants.

UREDOS (USTILAGO) SEGETUM, Pers. *Smut*. Growing on the receptacle and rachis; epidermis soon ruptured; spores loose, minute, spherical, black.

On wheat, barley, oats, etc. Very common and destructive.

The "black heads" to be seen everywhere among crops of growing corn are caused by this Fungus, which soon destroys the whole head, converting it into a black powdery mass, which adheres to and stains everything that touches it. The spores, which are very minute, are of a dark olive-colour, though appearing black when viewed "*en masse*."

UREDOS RUBIGO, DC. *Rust*. Spots yellow, heaps oval, scattered, generally epigeous; epidermis at length bursting longitudinally; spores subglobose, red-brown, easily dispersed.

On grasses and corn. Common.

This, along with another species, *U. linearis*, is known under the common name of "Rust," and often damages corn crops con-

siderably, attacking both the stem and leaves. It appears in the form of red or orange-coloured spots, which consist wholly of spores.

Mossburnford, Aug. 9, 1860.

REMARKS ON THE VIOLA OF THE COAST SANDHILLS.

By A. G. MORE, F.L.S.

(See p. 122, current Vol., 1860.)

Unless I am much mistaken, Mr. J. G. Baker seems to have included two different plants under the name of *V. sabulosa* of Boreau.

After examining several specimens, for which I am indebted to the kindness of Mr. Syme, together with others which I have myself gathered upon three different tracts of sandhills or "dunes," I cannot avoid the conclusion that the Pansy from New Brighton is identical with the true *V. Curtisii* of Forster, differing so little as it does from that plant as found in Anglesea and North Devon. I have further learned from Mr. Baker that it is the New Brighton Pansy which Mr. Jordan identifies with Boreau's *V. sabulosa*, so that the latter name would appear to be simply a synonym for the *V. Curtisii* of Forster.

I may here remark that the name "*sabulosa*" has been applied to quite another plant by Reichenbach, who, in his 'Flora Excursoria' (1832), mentions under *Viola canina* (of Linnæus and Fries) a var. β *sabulosa*, often found upon the coast sandhills, and which I have reason to believe occurs at Hayling Island, in Hampshire.

But the Portmarnock *Viola* (miscalled *V. Curtisii* by MacKay) is very different, and I am inclined to think *V. Symei* only a still more luxuriant state of the same plant: both of the Irish Violets (from counties Dublin and Sligo) appearing, in my humble judgment, mere varieties of *Viola tricolor*. Perhaps the name "*arenicola*" might be advantageously given to the Portmarnock Pansy, if it be thought a sufficiently marked variety; at any rate it seems not entitled to be called either *V. Curtisii* or *V. sabulosa*.

To add a few further notes upon the three plants, *Viola tricolor*, var. *arenicola* (from Portmarnock), has a root evidently

perennial, or at least biennial, for I have the withered and bleached stems of the previous year still attached to my specimen. This root is much branched and penetrates far into the sand, but still produces only one crown, from which spring many stems. The whole plant is thickly set with short hairs. Most even of the lower stipules have their middle lobe crenated and obovate-spathulate; higher up the middle lobe becomes leaf-like, lanceolate-obovate, toothed, and far broader in proportion than in *V. Curtisii*. Sepals acuminate and ciliate, as in *V. tricolor*; their appendages about equalling the corolla-spur. Corolla, in my specimens, altogether of a full yellow colour, the petals rounded and contiguous, much larger than in the Anglesea plant, which however was collected later in the same year.

I cannot here find any characters by which to separate this plant from *V. tricolor*, of which Mr. Babington very justly considers it a variety. If the root be biennial, or even perennial, the occurrence of biennial roots of *V. arvensis* in stubbles in the early spring is too well known to allow of much stress being laid upon this point.

V. tricolor, var. *Symeii* (Baker), is also apparently of longer duration than one year, but its large crenate middle stipules and short corolla-spur equally refer it to *V. tricolor*. The petals, as shown in the specimen from Mr. Syme, do not exceed in size those of the Portmarnock *Viola*. It differs however from the latter in being more glabrous, and in having its foliage wider, blunter, and less deeply crenated, even the lateral lobes of the stipules being sometimes widened upwards—spathulate as it were. This I have also observed to take place in the biennial plants of *V. tricolor*, var. *arvensis*.

I find still more reason against identifying *V. Symeii* with *V. lutea* (as a var.) in the fact that I have gathered upon the sandhills at Miltown Malbay, in the west of Ireland, a Pansy, which I consider to be most truly *V. lutea*. In this the flowers are much larger than in *V. Symeii*; the stipules are palmate, with the middle lobe broad, nearly ligulate, bluntish, and quite entire, the middle lobe being less than twice the length of that next adjacent; sepals quite glabrous, with their appendages falling short of the corolla-spur; root far-creeping, not tufted, but, I believe, rhizomatous.

V. Curtisii, Forst., is far more distinct-looking than any of the

above. Specimens from Llyn Coron, Anglesea, agree exactly with what Babington says of the scabrous stems and the separation of the lateral lobes of the stipules. In the latter respect, as well as in the tufted stem springing from a perennial root, the plant nearly approaches *V. tricolor*; but the form of the middle lobe of the stipules will always be sufficient to distinguish it. The lower stipules are nearly palmate, with a ligulate sharply-pointed middle lobe; the upper stipules have it narrowly obovate-oblong, entire, as far as I can see, upon the three plants from Anglesea, New Brighton, and Braunton. If obsoletely crenate sometimes, it is still very different in form and size from the middle lobe of the upper stipules of any variety of *V. tricolor*. Sepals glabrous or nearly so, their appendages falling much short of the corolla-spur. Petals rather narrow, whitish-yellow in the Anglesea plant, purplish-yellow in that from Cheshire, which latter has more pointed sepals; but the crenations upon the upper stipule-lobe must be rare, as I do not find any upon the specimens before me.

Bembridge, April, 1860.

EXTRACTS FROM CORRESPONDENCE.*

Listera cordata not rare in Merionethshire.

. . . When you and I had the pleasure of gathering this elegant little Orchis in June 1859 upon the boggy hillsides between this and Llangwm, I had no idea that the plant was so generally distributed, in all directions, about this part of Merionethshire; but every day's longer acquaintance with these extensive moors will (as I already begin to find) add materially to our store of facts tending to illustrate the geographical botany of this hitherto little-explored county Merionethshire. In the months of June and of July in the present year (1860), while beating the ground over for *Rubus Chamæmorus* upon the Berwyns, in company with John Jones, it occurred to us to examine that part of the ridge between Moel-cwm-shant-Llwyd and Cader Fronwen, and in no less than three distant spots we came upon abundance of this pretty plant. The first spot is a boggy heath-covered part of the mountain, about a quarter of a mile east of

* See vol. iv. p. 53.

the Llangynog and Llandrillo road, and perhaps a furlong from the ridge which marks the division of the counties Montgomery and Merionethshire. There it was plentiful beneath the shelter of the common Heath, where there is a tolerably thick surface of decaying Mosses, in which, and *not in the earth*, the slender roots of this elegant plant love to creep. We afterwards met with it in several distant parts of the mountain, and it even occurs at no great distance from the same ridge about five miles nearer to the highest peak, viz. Cader Fronwen, and perhaps one mile from its summit. Again we find it two or three miles from Llandrillo; and lastly it occurs within about a couple of miles of our own village. . . . I hope to send you from time to time a few stray notices which may prove helpful to some of our botanical tourists who may visit these parts. . . . W. P.

Llandderfel, July, 1860.

Rubus Chamæmorus.

This plant grows in the greatest abundance in the Berwyn mountains, and is perfectly known to the cottagers, who call it by a Welsh name which means the Berwyn Mulberry. The place in which we found this plant in such plenty, is an extensive bog very high up in the mountain, due west from Cader Fronwen, perhaps one mile from this conspicuous cairn-crowned peak (it is the loftiest summit of the entire Berwyn range), and near the head of the easternmost of the numerous Nants or Cwms leading down towards Llandrillo from various parts of the ridge. The spot will be recognized by the immense quantity of the larger *Eriphorum* which in a manner engrosses the place to the exclusion of nearly all other herbage. This bog is of great extent, but we found it pretty sound and safe to walk upon (in July), and it may be a mile and a half from that track used by the country people where the ridge is crossed in going from Llandrillo to Llanarmon, and a good two or two and a half miles from a similar track over the same ridge leading to Pistyll Rhaiadr. It was remarked by us that good fruit specimens of the Cloud-berry were extremely rare this season: the most of the plants after having flowered had proved barren, so that it was with some difficulty that we could secure one or two specimens with fruit. The plant, however, when topped by a *ripe* fruit, makes a very pretty appearance, as it is a fine lively colour, differing, I

think, from that of every other British fruit. Perhaps the scarcity of fruit upon the Cloudberry may be attributed to the remarkable character of the present season. All the strawberries in the gardens of our village have (as the gardeners term it) gone blind, and so it is with the *Rubus Chamæmorus*. . . . W. P.

Llandderfel, July, 1860.

ON NATURE-PRINTING.

British Ferns, Nature-printed.

Nature-printed Ferns is something novel and attractive, and proves that art is doing much in this way for our instruction. In looking over these volumes of Ferns printed, some persons might at first view be almost inclined to take them for realities. It is fortunate that this class of plants, from their peculiar form and structure, is suitable for being thus represented; it would be impossible, with success, to subject our wild-flowers to the same process. The Ferns are now becoming not only interesting, but very fashionable as objects of study, particularly by ladies, who are the first to admire all such as partake of grace and beauty; and the present volumes will be very useful to those artists who prefer taking drawings from copies, instead of seeking for the originals. We hope, however, that this attractive work will not become a substitute for natural Ferns, nor in the least prevent the fern-collector seeking them in their native localities, nor permit him to neglect what is more important still,—the intimate study and investigation of their habit, structure, and peculiarities.

It must be remembered that these nature-printings are but one-sided portraits of the originals, *after*, not *to* the life; and the most we can derive from them is the advantage of correct forms of the under side of the fronds. The process of printing is thus described by Messrs. Bradbury, the patentees:—"A plant, by pressure, is made to transfer, or so to speak, engrave itself into a plate of metal; impressions printed from which represent the size and form of the plants, with all the minutest details of its identification."

The letter-press descriptions are by an able hand, and give what is required.

Next to possessing the plants alive, we choose to have them dead, or dried in our *hortus siccus*, laid out carefully and in order. In looking at them there as occasion calls, we are reminded of the pleasure and satisfaction felt in our rambles and walks to collect them, particularly when it was for *Hymenophyllum Wilsoni*, or *H. tunbridgense*, on Linx Tor, Dartmoor, and the valley of Trebartha, near Launceston, places not more than fifteen miles apart; or it might be for the *Ceterach officinarum*, from the ancient tower of Brading church, or the *Osmunda regalis* from the valley of Alverstoke, in the Isle of Wight. There are pleasures beyond the mere possession of these plants which the volumes of Nature-printed Ferns fail to give us; besides, there is sufficient in the plants when dried to enable the botanist to recognize and remember their particular structure, having previously examined them in a living state.

We do not perceive, as some of the reviewers of this work tell the public, that the Ferns seem to grow upon the pages of Mr. Moore's work, or they form a *hortus siccus* of pteridology in themselves. It is true that the forms of the fronds are correctly shown, but the spore-cases, by which Ferns are most particularly distinguished in genera, are not sufficiently defined; the botanist when he looks at them must be able to decide whether the spore-cases are circular, or confluent, or linear; or covered by an indusium, reniform, peltate, or hooded; or surrounded by a fringed involucre or oblong, curved; or in elongate groups, with a straight indusium; or elongate, straight, in parallel pairs; or elongate, scattered among imbricated chaffy scales; or continuous or not continuous; oblong or rounded; or the receptacles two-valved, or urn-shaped, and such-like distinctions.

One of our contemporary journals for this month, speaking of these Nature-printed Ferns, tells us "that many of the rarer Ferns so prized by collectors are not often the most beautiful, as for example the *Asplenium germanicum*."

This may be matter of opinion, or fancy, or taste of the collector; but the botanist sees beauty in all the plants of creation, different only in degree. Life itself is beauty of the highest order, and the difference in form is more of a distinctive character. The most earnest admirers of the works of the Creator, who see in all the manifestation of his wisdom, power, and goodness, do not speak of them as beautiful and ugly, or as high

and low, by way of contrast. One plant may be more simple, complex, or less complex in structure and organization than another, but each is known to be equally adapted to the purposes for which the all-wise Creator made it. Besides this, there is its utility—in each some, and yet all different.

“Oh, mickle is the powerful grace that lies
In herbs, plants, stones, and their true qualities;
For nought so vile that on the earth doth live,
But to the earth some special good doth give;
Nor ought so good, but strained from that fair use,
Revolts from true birth stumbling on abuse.”

Romeo and Juliet, act ii. sc. 3.

It is certain that our knowledge of British Ferns has greatly extended since the time Dr. William Turner, Dean of Wells, wrote his ‘Herbal.’ We can number sixty species; he speaks only of two, as follows:—“There are two kinds of Brakes (or Ferns), the one kind is called in Latin *Filix mascula* and in Greek *Pteris*; it grows commonly upon stones. The second kind is called in Latin *Filix femina*; that is the common Fern or Brake which the northern men call a Braken.” Philemon Holland, in his translation of Pliny, book 27, says:—“Of Ferne be two kinds, and they bear neither flower nor seede. Some of the Greeks call the one *Pteris* and the other *Blechnum*.” Turner notices that the Ferne had seed, and says, “I do gather by no vain conjecture that in treating of divers griefs it is of greater power and strength than either the root or the leaf be.”

Although the early writers on Ferns had not the advantage of Mr. Bradbury’s nature-printing, they did not fail to investigate the properties and uses of the few they were acquainted with, and the apothecaries made divers preparations therefrom to relieve “the ills that flesh is heir to.” Some of them are noticed by Dr. Turner, and he concludes his chapter on the virtues of the male Fern by stating, “This is a marvellous nature that the Fern hath, namely the male, that if a man cut the root of it, in the midst it will shew on each side a black eagle, with two heads out of white.”

Fern-seed was supposed by our early writers to have great magical powers, and it was to be gathered on Midsummer eve; they fancied that those who possessed the secret of wearing this seed about them would become invisible. This property of fern-seed is alluded to by Shakspeare in the first part of Henry IV.,

act ii. scene 2. Gadshill says, "We steal as in a castle—cock sure; we have the receipt of fern-seed, we walk invisible." But Shakspeare did not believe in this, as he makes the chamberlain say in reply "that Gadshill was more beholding to the darkness of the night than to fern-seed."

It would be very amusing to many persons when looking over these printed Fern volumes, to hear what our early writers thought of Ferns, and the many virtues they attached to them, although they never speak of their beautiful forms. For instance, Lyte, in his translation of Dodoens, would tell them that the root of the male Fern is very good against the hardness and stopping of the melt and spleen, and it will drive away and kill broad and round worms; that the Osmund or Water Fern is called Saint Christopher's herb, the root of which is good against squats and bruises, heavy and grievous falls, burstings, etc., or what hurt or or dislocation soever it be; and many practisers at this day do put it into their pots and drinks which they make for wounds, causing it to boil with other herbs. He says also that the white Oak Fern, which is the right *Dryopteris*, is of such a strong power or virtue that it causeth the hair to fall off, and maketh the skin bald.

As late as 1657 we find William Coles, who was a herbarist, and wrote a book entitled "Adam in Eden; or the Paradise of Plants," speaking of Spleenwort, or Miltwort, tells us that the learned Crollius, amongst the signatures of parts, doth set down Ceterach to have the signature of the spleen, and that therefore it is profitable for all diseases thereof; and Vitruvius saith that the swine in Candy, where there is store thereof, by feeding thereon, were found without spleens; and it is said also that when asses are oppressed with melancholy they eat thereof, and so ease themselves of the swelling of the spleen.

Of Fern he says, "the smoke of it being burned driveth away serpents, gnats, and other noisome creatures from those places which are molested therewith;" also, "I read that in Warwickshire the good housewives use the female Fern instead of soap, making it up about Midsummer in balls, which when they will use they burn until it become bluish, and then lay it aside to dissolve into powder like lime, which will do the deed."

Dr. Caleb Threlkeld, in his 'Synopsis Stirpium Hibernicarum,' 1727, speaking of Ferns, says, "A great sputter has been made

about fern-seed, and several sauntering stories feigned concerning its collection on St. John's eve, which are mere trumpery. I believe all herbs have seeds in themselves to produce their kind (Gen. i. 11, 12); for both the *Desche* and *Heseb*, that is the grass and the herb, have seed. The word *Desche* is from the root *Duscha*, which signifies to bud or sprout (Joel ii. 22), which seems to imply in it all kind of herbs; the provender of the wild ass (vi. 5) and the maintenance of the kind (Jer. xiv. 5): the heifers at grass grow fat (Jer. l. 11); and as the sacred text is the only divinity, so it is the best philosophy, and does assert seed in plants, to which modern discoveries agree." S. B.

Buck-wheat or Beech-wheat.

"Of the like disposition almost is Buck or Beech Wheat, unknowne to our old fathers. It is called *φαγοπυρον*, Beech-wheat, or *μελαμπυρον*, Black-wheat, though *μελαμφρον* signifieth another graine. I had rather call it Beech-wheat, because the graine thereof is three-cornerd, not unlike the beech-mast both in colour and forme, differing only in the smalnesse. The stalke is very great, and straked like to the greater Fearn: it hath many branches, with a bushy top, a great sort of white flowers in a knop, like the flower of Elder: it flowreth long together, and after appeareth the graine, first white and greenish, in shape three-cornerd. After they be ripe, the colour changeth to blacke or brownish, like a Chesnut. This graine hath not long since bene brought from Russia and the northern parts in Germanie: now it is become common, and used for fattening of dogs, and serueth the common people in deare seasons, to make bread and drink withall. It may be sowede in any grounds, and is sown in April, May, and in June, after the reaping of rape-seed. You must sowe lesse of it upon an acre by a fourth part then of Wheat or Rye. It is much used to be sowed upon where Rapes grow, whereby the ground doth yeeld a double crop in one year. When it is sown, it commeth up, if it be moist weather, within foure or five dayes after, having two leaves at the first appearing, not much unlike to Purslane." —*Barnaby Goorge his Husbandrie*, p. 30 a.

Sonchus palustris.

A correspondent furnishes the following notice of an unrecorded locality for the above-mentioned rare species.

This fine plant, one of the rarest of the *Compositæ*, and until very recently believed to be extinct in the neighbourhood of London, was observed in great abundance last July by Mr. J. S. Mill, well known to the readers of the 'Phytologist' as one of the most successful investigators of the localities of the rarer British species.

This tallest of the *Sonchi* is described in Gerarde, p. 294, under the name of *Sonchus arborescens alter*; and by Clusius, p. cxlvii., *Sonchus levior altissimus*; also, in Cl. Stirpes Pannon., under the same name. This excellent botanist localizes the plant thus:—"Invenitur in paludosis, salicetis et harundinetis, juxta piscinas et stagnantes aquas supra Badam Austriæ," etc. The place of growth is thus given by Parkinson, Theat. Bot. p. 809:—"It groweth among Willows and Reedes, and yet I have here inserted it for the tallness thereof." Ray localizes it thus:—"Ad ripas Thamesis fluvii, non procul Greenwich, et circa Blackwall." The late Mr. Luxford found this plant not far from Blackwall, on the Essex side of the river; but though his locality was visited, the plant was not found. There is a specimen in the Linneæan herbarium (only a fragmentary one), collected by Mr. Joseph Woods and Mr. Kippist about thirty years ago, between Deptford and Greenwich, in an osier-holt. Since that period to the present, no example of the plant has been seen near London, with the exception of a solitary specimen growing in the Medway at Aylesford, below Maidstone, which was observed by a party of botanists who passed that way in going to Boxley, in 1857.

It will gratify all lovers of British plants to hear that they may now, at very little expenditure of time and money, procure for their respective *herbaria* a good supply of specimens of this noble plant.

The locality is within half an hour's journey from the Metropolis.

About two years ago, the readers of the 'Phytologist' were agreeably surprised by the announcement of an unrecorded station for *Leucojum æstivum*. (See 'Phytologist,' N.S. vol. ii. p. 510.)

The locality for the summer Snowflake, as then and there recorded, produces the *Sonchus* in great abundance and luxuriance. Those who have once seen the latter here will never afterwards confound any state of *S. arvensis* with this very well distinguished species. The marsh Sow-Thistle is at least twice as tall as the *S. arvensis* is; its stem is perfectly straight, and, as the old botanists described it, "a little thicker than a man's thumb." It has a few short branches at or very near the top of the stem, and the flowers are corymbose. The leaves, and especially the basal lobes, afford the most obvious and certain distinctive marks between the two species. There are said to be differences in the structure of the stems. Will any one be good enough to compare them, and publish the result of his comparison?

The way to the locality where both this *Sonchus* and the *Leucojum* grow, (they do not flower at the same time; there is three months' difference in their flowering; but they may be probably found both at the same period, viz. the Snowflake in flower, and the *Sonchus* just putting forth its radical leaves,) is as described below. The visitor—it is to be hoped that he is not an extirpator, nor exterminator, nor eradicator, nor rapacious collector—may leave the railway either at the Woolwich Arsenal station or at the Abbey Wood station. In either contingency the stranger should go direct to the river, along the Artillery practising-ground. On the right he will observe a recently-erected brick building—probably a powder-magazine—where there is a landing-wharf. The way to the *Sonchus* and *Leucojum* station is along the river-bank, having the Woolwich exercise-ground on the left, and the river on the right hand. Before reaching the wooden fence which prevents the pedestrian from advancing further in the direction of Woolwich, in a place which is now (August, the 20th) covered with reeds, the usual herbage of this part of the marsh, which is between the bank and the flood, the *Sonchus* is sprinkled all over the place, just topping the tall reeds, or appearing between them. The extent of this flat or mud-bank is very considerable, but its length is much larger than its breadth. But large though the space be, there is no part along the bank from which the *Sonchus* cannot be distinctly seen. The bank itself, on the crown or apex, abounds with *Lactuca saligna*, *Torilis nodosa*, etc., and at the

base *Aster Tripolium*, *Glaux maritima*, *Arenaria marina*, and other salt-marsh plants abound. *Silybum Marianum* is plentiful near the new brick building above mentioned.

Nearly a mile down the river, below the powder-magazine (the station above described is above the powder-magazine, between it and Woolwich), there is another colony of *Arundines*, not *Arundines Cami*, but the genuine *harundines* of Clusius, and in this second and smaller mud-flat there are more *Sonchi*, probably the genuine species, but it would be worth while to be certain. At all events, it is *now* quite certain that this rare plant has not been lost in this vicinity, neither by the extension of buildings for shipping and warehouse concerns, nor has it gradually perished by the want of pure water, as the *Huttonia* has or is gradually perishing in Letchmere, near the Wandsworth road: it has not been exterminated by the rapacious plant-seekers. There is plenty here to satisfy the reasonable demands of botanists for centuries to come.

One plant has disappeared—it is to be hoped only for a time—viz. *Polypogon littoralis*. This rare species, before the Crimean war, grew in plenty near the butts. It perished, like many better things, during that disastrous conflict. This is no riddle, it is as plain as the connection between the building of Tenterden Steeple and the choking-up of Sandwich Haven by the drift from the Goodwin Sands.

It is admitted by all good botanists that the gratification of *giving* is at least equal to that of *getting*; that the pleasure of communicating information about a locality for a rare plant is at least equal to that of discovering it. Country botanists, who do not contemplate a journey to London in the month of August, will find no difficulty in getting specimens from some of their correspondents who live in or near London. The commercial value of botanical specimens is absolutely *nil*, and perhaps it is not desirable to enhance their marketable importance, but as a medium of friendly intercommunication they cannot be over-estimated. They yield a pleasure to the receiver, and impart a double delight to the giver. There is truth in the old saw—“*Gif Gaf makes gude friends* ;” in giving specimens of rare plants, the liberal tendencies of our being, the natural human sympathies, are indulged at a very moderate expense.

Reviews.

The Leigh Chronicle, August 4th, 1860.

The 'Phytologist' was recommenced, now nearly six years ago, for the express purpose of encouraging the study of botany amongst all classes of the community; and therefore all notices similar to that recorded in the 'Leigh Chronicle,' for which hearty thanks are hereby tendered to the fair correspondent who sent it, are particularly welcome.

Some time during the latter part of July (July 28) a party of the men of Lancashire who are devoted to the study of natural objects, met to explore the botany of Mosley Common; and they appear to have succeeded to their hearts' content.

The plants collected were numerous, and possibly some of them are rare in the neighbourhood of Worsley, although they are far from scarce in Middlesex and in the southern counties of England. The following are some of the most interesting, viz. *Vinca minor*, *Convolvulus sepium*, *Mæchia erecta*, *Bidens tripartita* and *B. cernua*, *Hypochæris glabra*, *Anacharis Alsinastrum*—this plant would have been a rarity anywhere in England fewer than twenty years ago; it has spread with marvellous rapidity,—*Acorus Calamus*—this plant appears to be common in several places near Leigh,—*Veronica Anagallis*, etc. etc.

It is very good-natured of the zealous naturalists of Lancashire to tell the readers of the 'Leigh Chronicle' that such plants as Shepherd's-purse, common Chickweed, common Mouse-ear, common Daisy,—favourites of both young and old,—common Yarrow, and many equally common plants, grow on Mosley Common; and it would be further satisfactory if they could tell us why some of the plants are chronicled at all as growing there, when it is notorious that they grow everywhere. A crabbed critic would tell these amiable amateurs that they might have omitted such species as the common Nettle, the Dog-Violet, common Bramble, Dog-Rose, etc. etc.

If these honest men would condescend to take a hint from a practical botanist who has been a collector of plants during at least forty years, and probably has written more on the subject of local botany than any living naturalist, they might render their

contributions more serviceable both to scientific observers and to the non-botanical portion of the public.

Instead of giving the names of the Orders in English, and the names of the plants in Latin, a well-wisher takes the liberty of advising them to omit the ordinal names. Potato family, Rhubarb family, Periwinkle family, Fuchsia family, etc., do not convey much information to the unlearned, and what little they bear to the initiated is not quite accurate: the Fuchsia, the Periwinkle, and the Rhubarb, are not the types or representatives of these Orders.

The common English names of the plants would be generally as well known, and would be more popular than the scientific, which are usually so incorrectly printed in provincial, and even in Metropolitan papers, as to be ridiculous in the eyes of the malevolent, and ludicrous even to good-natured readers.

A more useful classification would be by locality, viz. aquatics, comprehending all plants which grow in water, as for example, Pondweeds (*Potamogeton*, *Zannichellia*, etc.); marsh plants: ivy- and celery-leaved Buttercup, etc.; hedge plants: Honeysuckle, Bindweed, etc.; sylvan or woodland plants: Periwinkle, etc.; heath plants (*Ericetals*): common Milkwort; wayside (roadside) or viatical plants: great Celandine (Swallow-wort); cornfield plants (agrarial): Poppies, wild Mustard, etc.; meadow plants (pratal plants): Scabious, etc.

These hints are humbly submitted to the botanical fraternity of Leigh, and to all others who wish to render their observations and researches useful to the community at large.

Common people or general observers never heed the scientific combination of plants into genera, orders, and classes. They might be induced to observe that water plants (aquatics) have some common mechanical structure; most of them float, and for this end their organs are furnished with a porous organization, a floating apparatus suitable for their economy, enabling them to live and propagate their species in water. They are also without some of the common appendages of terrestrial plants, such as hairs, down, etc.

Septal or hedge plants are such as need support; hence they are supplied with flexible twining stems or with tendrils or clasps, whereby they support themselves on other plants. The Hop, Bryony, Vetch, Pea, etc., belong to this class.

Sylvan or woodland plants are able to bear shade and the drip of trees : as several Orchids, the Bluebell, Primrose, many Ferns, etc.

Agarial or field plants are generally such as can only thrive where the soil has been pulverized by the necessary operations of culture, whether agricultural or horticultural. These are most annual weeds.

The plants of a parish or district might be readily and usefully classified after such a scheme as the above ; and hereby botany might be rendered truly interesting, instructive, and suggestive.

Index Filicum, Part VII. By THOMAS MOORE, F.L.S., F.H.S.,
Author of the 'Handbook of the British Ferns,' etc. etc.
London : William Pamplin, 45, Frith Street, Soho Square,
London.

We are very glad to see another Part of this well known work on the literature of Ferns.

This number contains the completion of the genus *Asplenium*, and the beginning of the genus *Athyrium*. The readers of the 'Phytologist' who are interested in the beautiful series of plants whose nomenclature and history are so elaborately worked out in this treatise, need no further information about its scope and objects. These have been repeatedly set before our readers.

There is however a new feature introduced, which will certainly render this excellent Index more popular, and far more useful, viz. the very expressive diagrams prepared by Mr. Fitch, the celebrated draughtsman of the Royal Gardens, Kew, the eminent artist of the 'Botanical Magazine.' Six plates are stitched up with this number, viz. *Polybotrya*, *Rhipidopteris*, *Elaphoglossum*—we suppose it is, but this is an inference derived rather from the etymological, than from the typographic art, for there is a *b* where an *o* would be expected,—*Lomariopsis*, *Stenochlæna*, *Olfersia*, *Soromanes*, *Neurocallis*, *Hymenodium*, and *Stenosemia*. This is surely a good shilling's-worth ! Mr. Fitch's name alone is a sufficient guarantee for the fidelity of the representations.

The publisher announces the issue of the remainder of the plates in consecutive numbers of thirty-six pages of letter-press and six plates. We hope that the list of subscribers will be

greatly extended, to remunerate the proprietors for the increased extension of expense and labour bestowed on this synopsis of the genera and species of Ferns.

BOTANICAL NOTES, NOTICES, AND QUERIES.

To the Editor of the 'Phytologist.'

Sir,—It may be of some interest to botanists to be informed, through your pages, that the grass *Phalaris paradoxa*, which stands in the 'British Flora' as an imperfectly naturalized species, still grows in considerable abundance (this year among Barley), in the field near Swanage, in Dorsetshire, where I first observed it in the year 1847. As it has now survived the culture of different crops upon a piece of arable land for at least thirteen years, this grass may be considered established in that locality. As far as I could observe during a brief visit of a few hours only, it does not appear to have spread over the arable land lying around it. I saw it nowhere but in its old station. From some unascertained cause, plants are frequently confined within a very narrow space upon land which for miles round seems to be equally well suited to their growth. *Erica ciliaris*, upon the neighbouring Wareham Heath, one strip of which alone it occupies, and *Simethis bicolor*, growing in one single spot between Bournemouth and Poole, may be instanced as examples.

Before closing, I would mention that in the middle of last month I obtained specimens of *Malaxis paludosa* in the boggy valley above Bournemouth, where it had been noticed by Mr. Borrer, but subsequently sought in vain by the late Dr. Bromfield. (See 'Phytologist,' vol. iii. p. 916.)

JAMES HUSSEY.

Salisbury, Sept. 4.

Sir,—Looking over Camden's 'Britannia' this afternoon, I lighted on the following note about *Eryngium campestre*:—"On the rock which you descend to the Ferrey from Plimouth over into Cornwall. This plant probably groweth not wild any where in England save here, near Daventry, in Northamptonshire, and on the shore call'd Friargoose, near Newcastle-upon-Tine."

It would be interesting to know whether the plant still exists in these spots, and I sent Camden's note in hopes some of your readers may be able to tell us.

The *exact* "Plimouth" station is, I fear, no more, but the plant still is to be found near Devil's Point.

T. F. RAVENSHAW.

Pewsey, Aug. 22.

Sir,—Can you tell me if *Trifolium hybridum* has been noted of late in any of the British Floras or local list of plants. Withering gives it in his 'Arrangement' (ed. 4, 1801), as occurring in "moist places near Peckham and Battersea," on the authority of Hudson. Since then, as far as I know, it has been passed over. Bentham, however, states that it is general on the Continent. It grows in several places in this neighbourhood, *e.g.* on the Sandhills, at Crosby, and near Arrow Brook, Cheshire:

when or how it came there it is impossible to say, but I have been told that in some places it is sown instead of the common Clover. If such be the case, doubtless some of your correspondents have noticed it elsewhere. I may mention that Mr. Fisher first determined it from the first-named locality, and it was detected in the second by that gentleman and myself in July.

I have just been looking over your list of Wandsworth plants in the 'Phytologist' for November last, and it may interest you to know that several occur with us on a piece of waste ground near the Birkenhead Docks, together with *Ornithopus compressus*, not entered as with you. I send a specimen herewith, as also of the *Trifolium* and of *Erythræa latifolia* and *Viola sabulosa* (Boreau).

FRED. M. WEBB.

Cloughton Village, near Birkenhead, Sept. 6.

Sir,—In compliance with the wish expressed by the writer of the Review of 'The Flora of Devonshire,' in the August number of the 'Phytologist,' I beg to send you a statement of the height of the principal mountainous elevations of the county of Devon. The authority is the 'History of Devon,' by the Rev. T. Moore:—

	Above the level of the sea.
Extreme elevation of Dartmoor	2090 feet.
Mean elevation	1782
Cawsand Beacon, near Oakhampton	2090
Haytor, or High Tor	1600
Rippon Tor	1540
Salsbury Castle, in High Bray	1500
Chapman's Barrow, near Challacombe	1200
Butterton Hill, near Ivybridge	1200
Black Down, near Tavistock	1160
Hoardown Gate, three miles from Ilfracombe	800
Great Hangman Hill	800
Great Haldon and Black Down	800
Little Hangman Hill	600
Two Bridges	1148
Source of the Erme	1131
St. Mary Tavy	648
Morwell Down	700
Furland Hill	589

Brighton, Aug. 19.

MARY P. MERRIFEILD.

Scrophularia vernalis, on the slope above the landing-place, Lundy Island, Rev. Chas. Kingsley, may be added to the Devon list.

IMPORTANT TO BOTANISTS.

Any botanist in Great Britain or Ireland who wishes to possess specimens of any or all of the following plants, will be supplied with the same by writing to me, and enclosing two postage-stamps to defray expenses:—*Circea alpina*; *Moneses grandiflora*; *Claytonia alsinoides*; *Scheuchzeria palustris*; *Trientalis europæa*; and *Carex limosa*.

I have also to spare a good many examples of *Anchusa sempervirens*, *Trifolium incarnatum*, *Cynoglossum sylvaticum*, *Polygonum Bistorta*, and *Allosorus crispus*, which I will give in exchange for the following plants:—*Lloydia serotina*, *Stachys germanica*, *Isnardia palustris*, *Cypripedium Calceolus*, and *Villarsia nymphaeoides*.

JOHN SIM.

9, Commercial Street, Perth.

LATHYRUS TUBEROSUS.

Our British Floras are not altogether destitute of rumours as to this (supposed newly discovered and) most interesting plant. In Lightfoot's 'Flora Scotica,' vol. ii. Appendix, p. 1137, original edition, 1777, may be read as follows:—

"*Lathyrus tuberosus*. In Dr. Hope's collection, but where collected he does not know." Is this Dr. Hope's herbarium still in existence? Dr. Lightfoot's own rather extensive herbarium was, I think, formerly in the late Mr. Robert Brown's possession. G. W.

[Last May, or in the beginning of June, I had the singular good hap to meet with a single plant of *Lathyrus tuberosus*, at Wandsworth Steamboat Pier. When vague rumours of the discovery of this visitant came to my ears, I began to turn my attention to the Wandsworth plant which had been removed into my garden, where it has thriven well, producing several stems, but no flowers.

As this species grows in cornfields in many parts of Europe, the north-west of France, for example, its occurrence at Wandsworth, where so many exotics have appeared, is no subject of wonderment. It may not be so easy to account for its being overlooked in Essex, where it is reported to occupy an extent of several square miles.—ED.]

THE DECLINE OF THE FLOWERS.

Pretty flowers and graceful leaves,
Too soon you must depart,
And leave a cold and barren time,
You that so cheer my heart!

Yes, oft I've rambled in the woods
When Spring was scarcely born,
And from amid the rotten leaves
The sweet young Violet torn.

And when the youthful Spring smiled sweet,
And laughed the buds to light,*
Then forth I went with cheerful heart
To pluck the Primrose bright.

* The laughter of this season, personified as it is, may probably be thought too poetical or too bold a figure, but as the effect was the opening of the buds, a smile would not have produced the effect. The surly winds of March and April, also very often shut up our buds instead of unfolding them, and the laughter, though possibly unbecoming in so dignified and graceful a personage as Spring, may be forgiven for the sake of its effects on the blowing of our buds.

The Annotator is not certain that he has apprehended the Poet's meaning; for

Then when the glorious May broke forth
 With mornings sweet and blue,
 I walked the green and daisied fields,
 So bright with silvery dew.

'Twas then I saw the Hawthorn white
 Shed blossoms in the breeze;
 I thought that so much beauty was
 Brought forth our sense to please.

Then passed the Summer's golden wand*
 Across sweet Flora-land;
 'Twas then a glowing painted scene
 Drawn by a master hand.

But now I see the Autumn sky
 Like floating wreaths of hues;
 Alas, my Flowers are yielding up
 Their tints in damps and dews!

There sits the Robin on a twig,
 His sweet lament to sing
 O'er pretty buds and graceful leaves;
 They'll come again next Spring.†

Wandsworth.

W. B. LINFIELD, Jun.

CUSCUTA EPILINUM.

There are a few good plants growing in a flax-field near Bromley, viz. *Cuscuta Epilinum*, *Camelina sativa*, *Lolium linicola*; and in a field near, *Silene anglica*!

W. W. R.

Sir,—Could you inform me on what grounds botanists now consider the *Oxalis Acetosella* to be the real Shamrock of Ireland, and why it should not be a Trefoil?

In Exeter, Canterbury, Salisbury, and Bristol Cathedrals, we have some fine carvings of the latter plant on the more ancient stalls in those venerable structures. If you can throw any light on this interesting subject in your next or any future number of your valuable journal, you will oblige, yours very truly,

C. E. P.

Torquay, Sept. 4.

it is probable that the idea as well as the expression is poetical, and ordinary prosaic mortals are not expected to entertain such lofty flights of fancy, as laughing buds into blossoms.—ED.

* We do not know whether Golden-rod should be read for "golden wand." The necessities of metre are painfully manifest even in greater poets than our author.—ED.

† This reminds the writer, of the Bonapartists in the winter of 1814 and 1815, when Napoleon Bonaparte was desired to retire to Elba for the benefit of his country and for the peace of Europe. His partisans displayed Violets in their button-holes, and used as a watchword, *Il reviendra au printemps*, a saying which bore a double sense, and which might be applied both to the little floweret and to the banished Emperor.—ED.

PLANTS NOTICED BY THE EARLY POETS.

Columbine.

Howard, Earl of Surrey, in one of his Poems, "Phillis and Corin," has the following lines:—

"How often would she flowers twine,
How often garlands make
Of *Cowslips* and of *Cullumbine*,
And all for Corin's sake!"

Michael Drayton speaks of "*Azurd Collumbine*." Also—

"*Cowslips of Jerusalem and Cloaves of Paradise*."

The last two flowers I should like to be better acquainted with. You referred in one of late numbers of the 'Phytologist' to some lines in Isaac Walton's 'Angler,' which noticed Cowslips and Culverkeys: the latter name I have not met with in any other book, and the nearest approach to it is Culverwort, *i.e.* Columbine. It would therefore appear that Culverkeys is one of the old names for the Columbine. S. B.

ANACHARIS ALSINASTRUM.

In flower in a pond on Wandsworth Common, August the 24th, 1860. This plant, which is now far too plentiful in most still or stagnant waters in the south-eastern counties of England, was observed in flower as stated above. It is a subject of regret that *Villarsia nymphaeoides* and *Stratiotes aloides* are rapidly disappearing in these waters. Some suspect that the *Anacharis* (American Water-weed, as it is commonly called), has been the agent for accomplishing this undesirable result. A.

"Sir, the year growing ancient,—
Not yet on summer's death, nor on the birth
Of trembling winter,—the fairest flowers o' the season
Are our Carnations and streaked Gillyflowers."

Winter's Tale.

Communications have been received from

J. S. M.; H. Boswell; F. M. Webb; John Sim; A. G. More; Rev. R. H. Webb; A.; Sidney Beisly; William Pamplin; Dr. Windsor; W. B. Linfield, Jun.

BOOKS RECEIVED FOR REVIEW.

Species Filicum.
Notes on Books.

ERRATUM.

In vol. iv. p. 258, line 23, for '*Hypericum Androsæmum* (not *H. anglicum*),' read '*H. Androsæmum* (or *H. anglicum*).'

A COMPARATIVE LIST OF BRITISH PLANTS,

Showing the different Names and Species adopted in the four best-known English Works.

The order here followed is that of Babington's 'Manual' (ed. 4), from which the names are in the first instance taken, omitting the species enclosed in brackets.

BABINGTON.	LOND. CAT.	HOOKE & ARNOTT.	BENTHAM.
Clematis Vitalba.	C. Vitalba.	C. Vitalba.	C. Vitalba.
Thalictrum alpinum.	T. alpinum.	T. alpinum.	T. alpinum.
Thalictrum minus.	T. minus.	T. minus.	T. minus.
<i>Thalictrum flexuosum.</i>	<i>T. flexuosum.</i>	<i>T. minus.</i>	<i>T. minus.</i>
<i>Thalictrum saxatile.</i>	<i>T. saxatile.</i>	<i>T. minus.</i>	<i>T. minus.</i>
Thalictrum flavum.	T. flavum.	T. flavum.	T. flavum.
Anemone Pulsatilla.	A. Pulsatilla.	A. Pulsatilla.	A. Pulsatilla.
Anemone nemorosa.	A. nemorosa.	A. nemorosa.	A. nemorosa.
Adonis autumnalis.	A. autumnalis.	A. autumnalis.	A. autumnalis.
Myosurus minimus.	M. minimus.	M. minimus.	M. minimus.
<i>Ranunculus trichophyllus.</i>	<i>R. aquatilis.</i>	<i>R. aquatilis.</i>	<i>R. aquatilis.</i>
<i>Ranunculus Drouettii.</i>	<i>R. aquatilis.</i>	<i>R. aquatilis.</i>	<i>R. aquatilis.</i>
<i>Ranunculus heterophyllus.</i>	<i>R. aquatilis.</i>	<i>R. aquatilis.</i>	<i>R. aquatilis.</i>
<i>Ranunculus confusus.</i>	<i>R. Baudotii.</i>	<i>R. confusus?</i>	<i>R. aquatilis.</i>
<i>Ranunculus Baudotii.</i>	<i>R. Baudotii.</i>	<i>R. confusus.</i>	<i>R. aquatilis.</i>
<i>Ranunculus floribundus.</i>	<i>R. aquatilis.</i>	<i>R. aquatilis.</i>	<i>R. aquatilis.</i>
<i>Ranunculus pellatus.</i>	<i>R. aquatilis.</i>	<i>R. aquatilis.</i>	<i>R. aquatilis.</i>
<i>Ranunculus tripartitus.</i>	<i>R. tripartitus.</i>	<i>R. tripartitus.</i>	<i>R. aquatilis.</i>
<i>Ranunculus circinatus.</i>	<i>R. circinatus.</i>	<i>R. circinatus.</i>	<i>R. aquatilis.</i>
<i>Ranunculus fluitans.</i>	<i>R. fluitans.</i>	<i>R. fluitans.</i>	<i>R. aquatilis.</i>
<i>Ranunculus cœnosus.</i>	<i>R. cœnosus.</i>	<i>R. cœnosus.</i>	<i>R. aquatilis.</i>
<i>Ranunculus hederaceus.</i>	<i>R. hederaceus.</i>	<i>R. hederaceus.</i>	<i>R. aquatilis.</i>
<i>Ranunculus sceleratus.</i>	<i>R. sceleratus.</i>	<i>R. sceleratus.</i>	<i>R. sceleratus.</i>
<i>Ranunculus Flammula.</i>	<i>R. Flammula.</i>	<i>R. Flammula.</i>	<i>R. Flammula.</i>
<i>Ranunculus Lingua.</i>	<i>R. Lingua.</i>	<i>R. Lingua.</i>	<i>R. Lingua.</i>
<i>Ranunculus Ficaria.</i>	<i>R. Ficaria.</i>	<i>R. Ficaria.</i>	<i>R. Ficaria.</i>
<i>Ranunculus auricomus.</i>	<i>R. auricomus.</i>	<i>R. auricomus.</i>	<i>R. auricomus.</i>
<i>Ranunculus acris.</i>	<i>R. acris.</i>	<i>R. acris.</i>	<i>R. acris.</i>
<i>Ranunculus repens.</i>	<i>R. repens.</i>	<i>R. repens.</i>	<i>R. repens.</i>
<i>Ranunculus bulbosus.</i>	<i>R. bulbosus.</i>	<i>R. bulbosus.</i>	<i>R. bulbosus.</i>
<i>Ranunculus hirsutus.</i>	<i>R. hirsutus.</i>	<i>R. hirsutus.</i>	<i>R. Philonotis.</i>
<i>Ranunculus arvensis.</i>	<i>R. arvensis.</i>	<i>R. arvensis.</i>	<i>R. arvensis.</i>
<i>Ranunculus parviflorus.</i>	<i>R. parviflorus.</i>	<i>R. parviflorus.</i>	<i>R. parviflorus.</i>
<i>Caltha palustris.</i>	<i>C. palustris.</i>	<i>C. palustris.</i>	<i>C. palustris.</i>
<i>Caltha radicans.</i>	<i>C. palustris.</i>	<i>C. palustris.</i>	<i>C. palustris.</i>
Trollius europæus.	T. europæus.	T. europæus.	T. europæus.
Helleborus viridis.	H. viridis.	H. viridis.	H. viridis.
Helleborus foetidus.	H. foetidus.	H. foetidus.	H. foetidus.
Aquilegia vulgaris.	A. vulgaris.	A. vulgaris.	A. vulgaris.

BABINGTON.	LOND. CAT.	HOOKE & ARNOTT.	BENTHAM.
Delphinium Consolida.	D. Consolida.	D. Consolida.	D. Consolida.
Aconitum Napellus.	A. Napellus.	A. Napellus.	A. Napellus.
Actæa spicata.	A. spicata.	A. spicata.	A. spicata.
<i>Pæonia corallina.</i>	<i>P. corallina.</i>	<i>P. corallina.</i>	<i>P. officinalis.</i>
Berberis vulgaris.	B. vulgaris.	B. vulgaris.	B. vulgaris.
Nymphaea alba.	N. alba.	N. alba.	N. alba.
Nuphar lutea.	N. lutea.	N. lutea.	N. lutea.
<i>Nuphar pumila.</i>	<i>N. pumila.</i>	<i>N. pumila.</i>	<i>N. lutea.</i>
Papaver Argemone.	P. Argemone.	P. Argemone.	P. Argemone.
Papaver hybridum.	P. hybridum.	P. hybridum.	P. hybridum.
Papaver Rhœas.	P. Rhœas.	P. Rhœas.	P. Rhœas.
Papaver dubium.	P. dubium.	P. dubium.	P. dubium.
Papaver somniferum.	P. somniferum.	P. somniferum.	P. somniferum.
Meconopsis cambrica.	M. cambrica.	M. cambrica.	M. cambrica.
Rœmeria hybrida.	R. hybrida.	R. hybrida.	R. hybrida.
Glaucium luteum.	G. luteum.	G. luteum.	G. luteum.
Chelidonium majus.	C. majus.	C. majus.	C. majus.
Corydalis lutea.	C. lutea.	C. lutea.	C. lutea.
Corydalis claviculata.	C. claviculata.	C. claviculata.	C. claviculata.
<i>Fumaria capreolata.</i>	<i>F. capreolata.</i>	<i>F. capreolata.</i>	<i>F. officinalis.</i>
<i>Fumaria officinalis.</i>	<i>F. officinalis.</i>	<i>F. officinalis.</i>	<i>F. officinalis.</i>
Fumaria officinalis.	F. officinalis.	F. officinalis.	F. officinalis.
<i>Fumaria parviflora.</i>	<i>F. parviflora.</i>	<i>F. parviflora.</i>	<i>F. officinalis.</i>
<i>Fumaria Vaillantii.</i>	<i>F. Vaillantii.</i>	<i>F. parviflora.</i>	<i>F. officinalis.</i>
Matthiola incana.	M. incana.	M. incana.	M. incana.
Matthiola sinuata.	M. sinuata.	M. sinuata.	M. sinuata.
Cheiranthus Cheiri.	C. Cheiri.	C. Cheiri.	C. Cheiri.
Nasturtium officinale.	N. officinale.	N. officinale.	N. officinale.
Nasturtium sylvestre.	N. sylvestre.	N. sylvestre.	N. sylvestre.
<i>Nasturtium palustre.</i>	<i>N. terrestre.</i>	<i>N. terrestre.</i>	<i>N. palustre.</i>
Barbarea vulgaris.	B. vulgaris.	B. vulgaris.	B. vulgaris.
<i>Barbarea stricta.</i>	<i>B. stricta.</i>	<i>B. vulgaris.</i>	<i>B. vulgaris.</i>
<i>Barbarea præcox.</i>	<i>B. præcox.</i>	<i>B. præcox.</i>	<i>B. vulgaris.</i>
<i>Turritis glabra.</i>	<i>T. glabra.</i>	<i>T. glabra.</i>	<i>Arabis perfoliata.</i>
Arabis hirsuta.	A. hirsuta.	A. hirsuta.	A. hirsuta.
Arabis ciliata.	A. ciliata.	A. ciliata.	A. ciliata.
Arabis stricta.	A. stricta.	A. stricta.	A. stricta.
Arabis petræa.	A. petræa.	A. petræa.	A. petræa.
Arabis Turrita.	A. Turrita.	A. Turrita.	A. Turrita.
Cardamine impatiens.	C. impatiens.	C. impatiens.	C. impatiens.
<i>Cardamine sylvatica.</i>	<i>C. hirsuta.</i>	<i>C. hirsuta.</i>	<i>C. hirsuta.</i>
Cardamine hirsuta.	C. hirsuta.	C. hirsuta.	C. hirsuta.
Cardamine pratensis.	C. pratensis.	C. pratensis.	C. pratensis.
Cardamine amara.	C. amara.	C. amara.	C. amara.
Dentaria bulbifera.	D. bulbifera.	D. bulbifera.	D. bulbifera.
Hesperis matronalis.	H. matronalis.	H. matronalis.	H. matronalis.
Sisymbrium officinale.	S. officinale.	S. officinale.	S. officinale.

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<i>Sisymbrium Irio.</i>	<i>S. Irio.</i>	<i>S. Irio.</i>	<i>S. Irio.</i>
<i>Sisymbrium Sophia.</i>	<i>S. Sophia.</i>	<i>S. Sophia.</i>	<i>S. Sophia.</i>
<i>Sisymbrium thalianum.</i>	<i>Arabis thaliana.</i>	<i>S. thalianum.</i>	<i>Arabis thaliana.</i>
<i>Alliaria officinalis.</i>	<i>Erysimum Alliaria.</i>	<i>A. officinalis.</i>	<i>A. officinalis.</i>
<i>Erysimum cheiranthoides.</i>	<i>E. cheiranthoides.</i>	<i>E. cheiranthoides.</i>	<i>E. cheiranthoides.</i>
<i>Erysimum orientale.</i>	<i>E. orientale.</i>	<i>E. orientale.</i>	<i>E. orientale.</i>
<i>Brassica oleracea.</i>	<i>B. oleracea.</i>	<i>B. oleracea.</i>	<i>B. oleracea.</i>
<i>Brassica campestris.</i>	<i>B. campestris.</i>	<i>B. campestris.</i>	<i>B. campestris.</i>
<i>Brassica campestris.</i>	<i>B. Rapa.</i>	<i>B. Rapa.</i>	<i>B. campestris.</i>
<i>Brassica Napus.</i>	<i>B. Napus.</i>	<i>B. Napus.</i>	<i>B. campestris.</i>
<i>Brassica monensis.</i>	<i>Sinapis Cheiranthus.</i>	<i>Brassica monensis.</i>	<i>B. monensis.</i>
<i>Brassica monensis, b.</i>	<i>Sinapis Cheiranthus.</i>	<i>Bras. Cheiranthus.</i>	<i>B. monensis.</i>
<i>Sinapis nigra.</i>	<i>S. nigra.</i>	<i>S. nigra.</i>	<i>Brassica nigra.</i>
<i>Sinapis arvensis.</i>	<i>S. arvensis.</i>	<i>S. arvensis.</i>	<i>Bras. Sinapistrum.</i>
<i>Sinapis alba.</i>	<i>S. alba.</i>	<i>S. alba.</i>	<i>Brassica alba.</i>
<i>Diploxaxis tenuifolia.</i>	<i>Sinapis tenuifolia.</i>	<i>Diploxaxis tenuif.</i>	<i>Brassica tenuif.</i>
<i>Diploxaxis muralis.</i>	<i>Sinapis muralis.</i>	<i>Diploxaxis muralis.</i>	<i>Brassica muralis.</i>
<i>Alyssum calycinum.</i>	<i>A. calycinum.</i>	<i>A. calycinum.</i>	<i>A. calycinum.</i>
<i>Draba aizoides.</i>	<i>D. aizoides.</i>	<i>D. aizoides.</i>	<i>D. aizoides.</i>
<i>Draba rupestris.</i>	<i>D. rupestris.</i>	<i>D. rupestris.</i>	<i>D. hirta.</i>
<i>Draba incana.</i>	<i>D. incana.</i>	<i>D. incana.</i>	<i>D. incana.</i>
<i>Draba muralis.</i>	<i>D. muralis.</i>	<i>D. muralis.</i>	<i>D. muralis.</i>
<i>Draba verna.</i>	<i>D. verna.</i>	<i>D. verna.</i>	<i>D. verna.</i>
<i>Cochlearia officinalis.</i>	<i>C. officinalis.</i>	<i>C. officinalis.</i>	<i>C. officinalis.</i>
<i>Cochlearia danica.</i>	<i>C. officinalis.</i>	<i>C. officinalis.</i>	<i>C. officinalis.</i>
<i>Cochlearia anglica.</i>	<i>C. officinalis.</i>	<i>C. anglica.</i>	<i>C. officinalis.</i>
<i>Armoracia rusticana.</i>	<i>A. rusticana.</i>	<i>A. rusticana.</i>	<i>Cochl. officinalis.</i>
<i>Armoracia amphibia.</i>	<i>Nasturtium amph.</i>	<i>Armoracia amph.</i>	<i>Nasturtium amph.</i>
<i>Thlaspi arvense.</i>	<i>T. arvense.</i>	<i>T. arvense.</i>	<i>T. arvense.</i>
<i>Thlaspi perfoliatum.</i>	<i>T. perfoliatum.</i>	<i>T. perfoliatum.</i>	<i>T. perfoliatum.</i>
<i>Thlaspi alpestre.</i>	<i>T. alpestre.</i>	<i>T. alpestre.</i>	<i>T. alpestre.</i>
<i>Thlaspi virens.</i>	<i>T. alpestre.</i>	<i>T. alpestre.</i>	<i>T. alpestre.</i>
<i>Hutchinsia petræa.</i>	<i>H. petræa.</i>	<i>H. petræa.</i>	<i>H. petræa.</i>
<i>Teesdalia nudicaulis.</i>	<i>T. nudicaulis.</i>	<i>T. nudicaulis.</i>	<i>T. nudicaulis.</i>
<i>Iberis amara.</i>	<i>I. amara.</i>	<i>I. amara.</i>	<i>I. amara.</i>
<i>Lepidium campestre.</i>	<i>L. campestre.</i>	<i>L. campestre.</i>	<i>L. campestre.</i>
<i>Lepidium Smithii.</i>	<i>L. Smithii.</i>	<i>L. Smithii.</i>	<i>L. Smithii.</i>
<i>Lepidium rudérale.</i>	<i>L. rudérale.</i>	<i>L. rudérale.</i>	<i>L. rudérale.</i>
<i>Lepidium latifolium.</i>	<i>L. latifolium.</i>	<i>L. latifolium.</i>	<i>L. latifolium.</i>
<i>Capsella Bursa-pastoris.</i>	<i>C. Bursa-pastoris.</i>	<i>C. Bursa-pastoris.</i>	<i>C. Bursa-pastoris.</i>
<i>Subularia aquatica.</i>	<i>S. aquatica.</i>	<i>S. aquatica.</i>	<i>S. aquatica.</i>
<i>Senebiera Coronopus.</i>	<i>Coronopus Ruellii.</i>	<i>Senebiera Coronop.</i>	<i>S. Coronopus.</i>
<i>Senebiera didyma.</i>	<i>Coronopus didyma.</i>	<i>Senebiera didyma.</i>	<i>S. didyma.</i>
<i>Isatis tinctoria.</i>	<i>I. tinctoria.</i>	<i>I. tinctoria.</i>	<i>I. tinctoria.</i>
<i>Cakile maritima.</i>	<i>C. maritima.</i>	<i>C. maritima.</i>	<i>C. maritima.</i>
<i>Crambe maritima.</i>	<i>C. maritima.</i>	<i>C. maritima.</i>	<i>C. maritima.</i>
<i>Raphanus Raphanistrum.</i>	<i>R. Raphanistrum.</i>	<i>R. Raphanistrum.</i>	<i>R. Raphanistrum.</i>

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<i>Raphanus maritimus.</i>	<i>R. maritimus.</i>	<i>R. maritimus.</i>	<i>R. Raphanistrum.</i>
<i>Reseda lutea.</i>	<i>R. lutea.</i>	<i>R. lutea.</i>	<i>R. lutea.</i>
<i>Reseda suffruticulosa.</i>	<i>R. fruticulosa.</i>	<i>R. fruticulosa.</i>	<i>R. alba.</i>
<i>Reseda Luteola.</i>	<i>R. Luteola.</i>	<i>R. Luteola.</i>	<i>R. Luteola.</i>
<i>Helianthemum guttatum.</i>	<i>H. guttatum.</i>	<i>H. guttatum.</i>	<i>H. guttatum.</i>
<i>Helianthemum Breweri.</i>	<i>H. guttatum.</i>	<i>H. guttatum.</i>	<i>H. guttatum.</i>
<i>Helianthemum canum.</i>	<i>H. canum.</i>	<i>H. canum.</i>	<i>H. canum.</i>
<i>Helianthemum vulgare.</i>	<i>H. vulgare.</i>	<i>H. vulgare.</i>	<i>H. vulgare.</i>
<i>Helianthemum polifolium.</i>	<i>H. polifolium.</i>	<i>H. polifolium.</i>	<i>H. polifolium.</i>
<i>Viola palustris.</i>	<i>V. palustris.</i>	<i>V. palustris.</i>	<i>V. palustris.</i>
<i>Viola odorata.</i>	<i>V. odorata.</i>	<i>V. odorata.</i>	<i>V. odorata.</i>
<i>Viola hirta.</i>	<i>V. hirta.</i>	<i>V. hirta.</i>	<i>V. hirta.</i>
<i>Viola sylvatica.</i>	<i>V. canina.</i>	<i>V. canina.</i>	<i>V. canina.</i>
<i>Viola canina.</i>	<i>V. flavicornis.</i>	<i>V. canina.</i>	<i>V. canina.</i>
<i>Viola stagnina.</i>	<i>V. stagnina.</i>	<i>V. lactea.</i>	<i>V. canina.</i>
<i>Viola lutea.</i>	<i>V. lutea.</i>	<i>V. lutea.</i>	<i>V. tricolor.</i>
<i>Viola tricolor.</i>	<i>V. tricolor.</i>	<i>V. tricolor.</i>	<i>V. tricolor.</i>
<i>Drosera rotundifolia.</i>	<i>D. rotundifolia.</i>	<i>D. rotundifolia.</i>	<i>D. rotundifolia.</i>
<i>Drosera intermedia.</i>	<i>D. intermedia.</i>	<i>D. longifolia.</i>	<i>D. longifolia.</i>
<i>Drosera anglica.</i>	<i>D. anglica.</i>	<i>D. anglica.</i>	<i>D. anglica.</i>
<i>Parnassia palustris.</i>	<i>P. palustris.</i>	<i>P. palustris.</i>	<i>P. palustris.</i>
<i>Polygala vulgaris.</i>	<i>P. vulgaris.</i>	<i>P. vulgaris.</i>	<i>P. vulgaris.</i>
<i>Polygala calcarea.</i>	<i>P. calcarea.</i>	<i>P. vulgaris.</i>	<i>P. vulgaris.</i>
<i>Polygala austriaca.</i>	<i>P. uliginosa.</i>	<i>P. vulgaris.</i>	<i>P. vulgaris.</i>
<i>Frankenia lævis.</i>	<i>F. lævis.</i>	<i>F. lævis.</i>	<i>F. lævis.</i>
<i>Frankenia pulverulenta.</i>	<i>F. pulverul. (excl.)</i>	<i>F. pulverulenta.</i>	<i>F. lævis ?</i>
<i>Elatine hexandra.</i>	<i>E. hexandra.</i>	<i>E. hexandra.</i>	<i>E. hexandra.</i>
<i>Elatine Hydropiper.</i>	<i>E. Hydropiper.</i>	<i>E. Hydropiper.</i>	<i>E. Hydropiper.</i>
<i>Dianthus prolifer.</i>	<i>D. prolifer.</i>	<i>D. prolifer.</i>	<i>D. prolifer.</i>
<i>Dianthus Armeria.</i>	<i>D. Armeria.</i>	<i>D. Armeria.</i>	<i>D. Armeria.</i>
<i>Dianthus plumarius.</i>	<i>D. plumarius.</i>	<i>D. plumarius.</i>	<i>D. plumarius.</i>
<i>Dianthus Caryophyllus.</i>	<i>D. Caryophyllus.</i>	<i>D. Caryophyllus.</i>	<i>D. Caryophyllus.</i>
<i>Dianthus cæsius.</i>	<i>D. cæsius.</i>	<i>D. cæsius.</i>	<i>D. cæsius.</i>
<i>Dianthus deltoides.</i>	<i>D. deltoides.</i>	<i>D. deltoides.</i>	<i>D. deltoides.</i>
<i>Saponaria officinalis.</i>	<i>S. officinalis.</i>	<i>S. officinalis.</i>	<i>S. officinalis.</i>
<i>Silene anglica.</i>	<i>S. anglica.</i>	<i>S. anglica.</i>	<i>S. gallica.</i>
<i>Silene nutans.</i>	<i>S. nutans.</i>	<i>S. nutans.</i>	<i>S. nutans.</i>
<i>Silene Otites.</i>	<i>S. Otites.</i>	<i>S. Otites.</i>	<i>S. Otites.</i>
<i>Silene inflata.</i>	<i>S. inflata.</i>	<i>S. inflata.</i>	<i>S. inflata.</i>
<i>Silene maritima.</i>	<i>S. maritima.</i>	<i>S. maritima.</i>	<i>S. inflata.</i>
<i>Silene conica.</i>	<i>S. conica.</i>	<i>S. conica.</i>	<i>S. conica.</i>
<i>Silene noctiflora.</i>	<i>S. noctiflora.</i>	<i>S. noctiflora.</i>	<i>S. noctiflora.</i>
<i>Silene acaulis.</i>	<i>S. acaulis.</i>	<i>S. acaulis.</i>	<i>S. acaulis.</i>
<i>Lychnis Viscaria.</i>	<i>L. Viscaria.</i>	<i>L. Viscaria.</i>	<i>L. Viscaria.</i>
<i>Lychnis alpina.</i>	<i>L. alpina.</i>	<i>L. alpina.</i>	<i>L. alpina.</i>
<i>Lychnis Flos-cuculi.</i>	<i>L. Flos-cuculi.</i>	<i>L. Flos-cuculi.</i>	<i>L. Flos-cuculi.</i>
<i>Lychnis vespertina.</i>	<i>L. vespertina.</i>	<i>L. vespertina.</i>	<i>L. vespertina.</i>

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<i>Lychnis diurna</i> .	<i>L. diurna</i> .	<i>L. diurna</i> .	<i>L. diurna</i> .
<i>Lychnis Githago</i> .	<i>L. Githago</i> .	<i>Agrostemma Gith.</i>	<i>L. Githago</i> .
<i>Sagina procumbens</i> .	<i>S. procumbens</i> .	<i>S. procumbens</i> .	<i>S. procumbens</i> .
<i>Sagina apetala</i> .	<i>S. apetala</i> .	<i>S. apetala</i> .	<i>S. procumbens</i> .
<i>Sagina ciliata</i> .	<i>S. ciliata</i> .	<i>S. ciliata</i> .	<i>S. procumbens</i> .
<i>Sagina maritima</i> .	<i>S. maritima</i> .	<i>S. maritima</i> .	<i>S. procumbens</i> .
<i>Sagina saxatilis</i> .	<i>S. saxatilis</i> .	<i>S. saxatilis</i> .	<i>S. Linnæi</i> .
<i>Sagina subulata</i> .	<i>S. subulata</i> .	<i>S. subulata</i> .	<i>S. Linnæi</i> .
<i>Sagina nodosa</i> .	<i>S. nodosa</i> .	<i>S. nodosa</i> .	<i>S. nodosa</i> .
<i>Honkeneya peplodes</i> .	<i>H. peplodes</i> .	<i>H. peplodes</i> .	<i>Arenaria peplodes</i> .
<i>Alsine stricta</i> .	<i>Arenaria uliginosa</i> .	<i>Arenaria uliginosa</i> .	<i>Arenaria uliginosa</i> .
<i>Alsine verna</i> .	<i>Arenaria verna</i> .	<i>Arenaria verna</i> .	<i>Arenaria verna</i> .
<i>Alsine rubella</i> .	<i>Arenaria rubella</i> .	<i>Arenaria rubella</i> .	<i>Arenaria verna</i> .
<i>Alsine tenuifolia</i> .	<i>Arenaria tenuifolia</i> .	<i>Arenaria tenuifolia</i> .	<i>Arenaria tenuifolia</i> .
<i>Cherleria sedoides</i> .	<i>C. sedoides</i> .	<i>C. sedoides</i> .	<i>C. sedoides</i> .
<i>Mœhringia trinervis</i> .	<i>Arenaria trinervis</i> .	<i>Arenaria trinervis</i> .	<i>Arenaria trinervis</i> .
<i>Arenaria serpyllifolia</i> .	<i>A. serpyllifolia</i> .	<i>A. serpyllifolia</i> .	<i>A. serpyllifolia</i> .
<i>Arenaria ciliata</i> .	<i>A. ciliata</i> .	<i>A. ciliata</i> .	<i>A. ciliata</i> .
<i>Arenaria norvegica</i> .	<i>A. norvegica</i> .	<i>A. norvegica</i> .	<i>A. ciliata</i> .
<i>Holosteum umbellatum</i> .	<i>H. umbellatum</i> .	<i>H. umbellatum</i> .	<i>H. umbellatum</i> .
<i>Stellaria nemorum</i> .	<i>S. nemorum</i> .	<i>S. nemorum</i> .	<i>S. nemorum</i> .
<i>Stellaria media</i> .	<i>S. media</i> .	<i>S. media</i> .	<i>S. media</i> .
<i>Stellaria Holostea</i> .	<i>S. Holostea</i> .	<i>S. Holostea</i> .	<i>S. Holostea</i> .
<i>Stellaria glauca</i> .	<i>S. glauca</i> .	<i>S. glauca</i> .	<i>S. glauca</i> .
<i>Stellaria graminea</i> .	<i>S. graminea</i> .	<i>S. graminea</i> .	<i>S. graminea</i> .
<i>Stellaria uliginosa</i> .	<i>S. uliginosa</i> .	<i>S. uliginosa</i> .	<i>S. uliginosa</i> .
<i>Mœnchia erecta</i> .	<i>M. erecta</i> .	<i>M. erecta</i> .	<i>M. erecta</i> .
<i>Malachium aquaticum</i> .	<i>Cerastium aquat.</i>	<i>Mal. aquaticum</i> .	<i>Stellaria aquatica</i> .
<i>Cerastium glomeratum</i> .	<i>C. glomeratum</i> .	<i>C. vulgatum</i> .	<i>C. vulgatum</i> .
<i>Cerastium triviale</i> .	<i>C. triviale</i> .	<i>C. viscosum</i> .	<i>C. vulgatum</i> .
<i>Cerastium semidecandrum</i> .	<i>C. semidecandrum</i> .	<i>C. semidecandrum</i> .	<i>C. vulgatum</i> .
<i>Cerastium pumilum</i> .	? <i>C. semidec.</i>	<i>C. viscosum</i> ?	<i>C. vulgatum</i> .
<i>Cerastium tetrandrum</i> .	<i>C. tetrandrum</i> .	<i>C. tetrandrum</i> .	<i>C. vulgatum</i> .
<i>Cerastium arvense</i> .	<i>C. arvense</i> .	<i>C. arvense</i> .	<i>C. arvense</i> .
<i>Cerastium latifolium</i> .	<i>C. latifolium</i> .	<i>C. latifolium</i> .	<i>C. alpinum</i> .
<i>Cerastium alpinum</i> .	<i>C. alpinum</i> .	<i>C. alpinum</i> .	<i>C. alpinum</i> .
<i>Cerastium trigynum</i> .	<i>Stellaria cerastoid.</i>	<i>C. trigynum</i> .	<i>C. trigynum</i> .
<i>Malva moschata</i> .	<i>M. moschata</i> .	<i>M. moschata</i> .	<i>M. moschata</i> .
<i>Malva sylvestris</i> .	<i>M. sylvestris</i> .	<i>M. sylvestris</i> .	<i>M. sylvestris</i> .
<i>Malva rotundifolia</i> .	<i>M. rotundifolia</i> .	<i>M. rotundifolia</i> .	<i>M. rotundifolia</i> .
<i>Althæa officinalis</i> .	<i>A. officinalis</i> .	<i>A. officinalis</i> .	<i>A. officinalis</i> .
<i>Althæa hirsuta</i> .	<i>A. hirsuta</i> .	<i>A. hirsuta</i> .	<i>A. hirsuta</i> .
<i>Lavatera arborea</i> .	<i>L. arborea</i> .	<i>L. arborea</i> .	<i>L. arborea</i> .
<i>Tilia europæa</i> .	<i>T. intermedia</i> .	<i>T. europæa</i> .	<i>T. europæa</i> .
<i>Tilia parvifolia</i> .	<i>T. parvifolia</i> .	<i>T. parvifolia</i> .	<i>T. europæa</i> .
<i>Tilia grandifolia</i> .	<i>T. grandiflora</i> .	<i>T. grandifolia</i> .	<i>T. europæa</i> .
<i>Hypericum calycinum</i> .	<i>H. calycinum</i> .	<i>H. calycinum</i> .	<i>H. calycinum</i> .

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<i>Hypericum Androsæmum.</i>	<i>H. Androsæmum.</i>	<i>H. Androsæmum.</i>	<i>H. Androsæmum.</i>
<i>Hypericum anglicum.</i>	(Excluded.)	<i>H. ?</i>	<i>H. ?</i>
<i>Hypericum quadrangulum.</i>	<i>H. quadrangulum.</i>	<i>H. quadrangulum.</i>	<i>H. quadrangulum.</i>
<i>Hypericum perforatum.</i>	<i>H. perforatum.</i>	<i>H. perforatum.</i>	<i>H. perforatum.</i>
<i>Hypericum dubium.</i>	<i>H. dubium.</i>	<i>H. dubium.</i>	<i>H. dubium.</i>
<i>Hypericum humifusum.</i>	<i>H. humifusum.</i>	<i>H. humifusum.</i>	<i>H. humifusum.</i>
<i>Hypericum linariifolium.</i>	<i>H. linariifolium.</i>	<i>H. linariifolium.</i>	<i>H. linariifolium.</i>
<i>Hypericum hirsutum.</i>	<i>H. hirsutum.</i>	<i>H. hirsutum.</i>	<i>H. hirsutum.</i>
<i>Hypericum montanum.</i>	<i>H. montanum.</i>	<i>H. montanum.</i>	<i>H. montanum.</i>
<i>Hypericum pulchrum.</i>	<i>H. pulchrum.</i>	<i>H. pulchrum.</i>	<i>H. pulchrum.</i>
<i>Hypericum elodes.</i>	<i>H. elodes.</i>	<i>H. elodes.</i>	<i>H. elodes.</i>
<i>Acer campestre.</i>	<i>A. campestre.</i>	<i>A. campestre.</i>	<i>A. campestre.</i>
<i>Acer Pseudo-platanus.</i>	<i>A. Pseudo-platanus.</i>	<i>A. Pseudo-platanus.</i>	<i>A. Pseudo-platanus.</i>
<i>Geranium phæum.</i>	<i>G. phæum.</i>	<i>G. phæum.</i>	<i>G. phæum.</i>
<i>Geranium sylvaticum.</i>	<i>G. sylvaticum.</i>	<i>G. sylvaticum.</i>	<i>G. sylvaticum.</i>
<i>Geranium pratense.</i>	<i>G. pratense.</i>	<i>G. pratense.</i>	<i>G. pratense.</i>
<i>Geranium sanguineum.</i>	<i>G. sanguineum.</i>	<i>G. sanguineum.</i>	<i>G. sanguineum.</i>
<i>Geranium pyrenaicum.</i>	<i>G. pyrenaicum.</i>	<i>G. pyrenaicum.</i>	<i>G. pyrenaicum.</i>
<i>Geranium pusillum.</i>	<i>G. pusillum.</i>	<i>G. pusillum.</i>	<i>G. pusillum.</i>
<i>Geranium dissectum.</i>	<i>G. dissectum.</i>	<i>G. dissectum.</i>	<i>G. dissectum.</i>
<i>Geranium columbinum.</i>	<i>G. columbinum.</i>	<i>G. columbinum.</i>	<i>G. columbinum.</i>
<i>Geranium rotundifolium.</i>	<i>G. rotundifolium.</i>	<i>G. rotundifolium.</i>	<i>G. rotundifolium.</i>
<i>Geranium molle.</i>	<i>G. molle.</i>	<i>G. molle.</i>	<i>G. molle.</i>
<i>Geranium lucidum.</i>	<i>G. lucidum.</i>	<i>G. lucidum.</i>	<i>G. lucidum.</i>
<i>Geranium Robertianum.</i>	<i>G. Robertianum.</i>	<i>G. Robertianum.</i>	<i>G. Robertianum.</i>
<i>Erodium cicutarium.</i>	<i>E. cicutarium.</i>	<i>E. cicutarium.</i>	<i>E. cicutarium.</i>
<i>Erodium moschatum.</i>	<i>E. moschatum.</i>	<i>E. moschatum.</i>	<i>E. moschatum.</i>
<i>Erodium maritimum.</i>	<i>E. maritimum.</i>	<i>E. maritimum.</i>	<i>E. maritimum.</i>
<i>Linum angustifolium.</i>	<i>L. angustifolium.</i>	<i>L. angustifolium.</i>	<i>L. angustifolium.</i>
<i>Linum usitatissimum.</i>	<i>L. usitatissimum.</i>	<i>L. usitatissimum.</i>	<i>L. usitatissimum.</i>
<i>Linum perenne.</i>	<i>L. perenne.</i>	<i>L. perenne.</i>	<i>L. perenne.</i>
<i>Linum catharticum.</i>	<i>L. catharticum.</i>	<i>L. catharticum.</i>	<i>L. catharticum.</i>
<i>Radiola Millegrana.</i>	<i>R. Millegrana.</i>	<i>R. Millegrana.</i>	<i>R. Millegrana.</i>
<i>Impatiens Noli-me-tangere.</i>	<i>I. Noli-me-tangere.</i>	<i>I. Noli-me-tangere.</i>	<i>Impatiens Noli-t.</i>
<i>Oxalis Acetosella.</i>	<i>O. Acetosella.</i>	<i>O. Acetosella.</i>	<i>O. Acetosella.</i>
<i>Oxalis corniculata.</i>	<i>O. corniculata.</i>	<i>O. corniculata.</i>	<i>O. corniculata.</i>
<i>Euonymus europæus.</i>	<i>E. europæus.</i>	<i>E. europæus.</i>	<i>Evonym. europæus.</i>
<i>Rhamnus catharticus.</i>	<i>R. catharticus.</i>	<i>R. catharticus.</i>	<i>R. catharticus.</i>
<i>Rhamnus Frangula.</i>	<i>R. Frangula.</i>	<i>R. Frangula.</i>	<i>R. Frangula.</i>
<i>Ulex europæus.</i>	<i>U. europæus.</i>	<i>U. europæus.</i>	<i>U. europæus.</i>
<i>Ulex strictus.</i>	<i>U. europæus.</i>	<i>U. europæus.</i>	<i>U. europæus.</i>
<i>Ulex nanus.</i>	<i>U. nanus.</i>	<i>U. nanus.</i>	<i>U. nanus.</i>
<i>Genista pilosa.</i>	<i>G. pilosa.</i>	<i>G. pilosa.</i>	<i>G. pilosa.</i>
<i>Genista tinctoria.</i>	<i>G. tinctoria.</i>	<i>G. tinctoria.</i>	<i>G. tinctoria.</i>
<i>Genista anglica.</i>	<i>G. anglica.</i>	<i>G. anglica.</i>	<i>G. anglica.</i>
<i>Sarothamnus scoparius.</i>	<i>Spartium scoparium.</i>	<i>Sar. scoparius.</i>	<i>Sar. scoparius.</i>
<i>Ononis arvensis.</i>	<i>O. arvensis.</i>	<i>O. arvensis.</i>	<i>O. arvensis.</i>

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<i>Ononis campestris.</i>	<i>O. antiquorum.</i>	<i>O. arvensis.</i>	<i>O. arvensis.</i>
<i>Ononis reclinata.</i>	<i>O. reclinata.</i>	<i>O. reclinata.</i>	<i>O. reclinata.</i>
<i>Medicago sativa.</i>	<i>M. sativa.</i>	<i>M. sativa.</i>	<i>M. sativa.</i>
<i>Medicago sylvestris.</i>	<i>M. sylvestris.</i>	<i>M. sativa.</i>	<i>M. falcata.</i>
<i>Medicago falcata.</i>	<i>M. falcata.</i>	<i>M. falcata.</i>	<i>M. falcata.</i>
<i>Medicago lupulina.</i>	<i>M. lupulina.</i>	<i>M. lupulina.</i>	<i>M. lupulina.</i>
<i>Medicago maculata.</i>	<i>M. maculata.</i>	<i>M. maculata.</i>	<i>M. maculata.</i>
<i>Medicago minima.</i>	<i>M. minima.</i>	<i>M. minima.</i>	<i>M. minima.</i>
<i>Medicago denticulata.</i>	<i>M. denticulata.</i>	<i>M. denticulata.</i>	<i>M. denticulata.</i>
<i>Melilotus officinalis.</i>	<i>M. officinalis.</i>	<i>M. officinalis.</i>	<i>M. officinalis.</i>
<i>Melilotus arvensis.</i>	<i>M. arvensis.</i>	<i>M. arvensis.</i>	<i>M. arvensis.</i>
<i>Melilotus vulgaris.</i>	<i>M. vulgaris.</i>	<i>M. vulgaris.</i>	<i>M. alba.</i>
<i>Trifolium pratense.</i>	<i>T. pratense.</i>	<i>T. pratense.</i>	<i>T. pratense.</i>
<i>Trifolium medium.</i>	<i>T. medium.</i>	<i>T. medium.</i>	<i>T. medium.</i>
<i>Trifolium ochroleucum.</i>	<i>T. ochroleucum.</i>	<i>T. ochroleucum.</i>	<i>T. ochroleucum.</i>
<i>Trifolium incarnatum.</i>	<i>T. Molinerii.</i>	<i>T. incarnatum.</i>	<i>T. incarnatum.</i>
<i>Trifolium stellatum.</i>	<i>T. stellatum.</i>	<i>T. stellatum.</i>	<i>T. stellatum.</i>
<i>Trifolium arvense.</i>	<i>T. arvense.</i>	<i>T. arvense.</i>	<i>T. arvense.</i>
<i>Trifolium striatum.</i>	<i>T. striatum.</i>	<i>T. striatum.</i>	<i>T. striatum.</i>
<i>Trifolium scabrum.</i>	<i>T. scabrum.</i>	<i>T. scabrum.</i>	<i>T. scabrum.</i>
<i>Trifolium Bocconi.</i>	<i>T. Bocconi.</i>	<i>T. Bocconi.</i>	<i>T. Bocconi.</i>
<i>Trifolium maritimum.</i>	<i>T. maritimum.</i>	<i>T. maritimum.</i>	<i>T. maritimum.</i>
<i>Trifolium subterraneum.</i>	<i>T. subterraneum.</i>	<i>T. subterraneum.</i>	<i>T. subterraneum.</i>
<i>Trifolium glomeratum.</i>	<i>T. glomeratum.</i>	<i>T. glomeratum.</i>	<i>T. glomeratum.</i>
<i>Trifolium strictum.</i>	<i>T. strictum.</i>	<i>T. strictum.</i>	<i>T. strictum.</i>
<i>Trifolium suffocatum.</i>	<i>T. suffocatum.</i>	<i>T. suffocatum.</i>	<i>T. suffocatum.</i>
<i>Trifolium repens.</i>	<i>T. repens.</i>	<i>T. repens.</i>	<i>T. repens.</i>
<i>Trifolium ornithopodiodes.</i>	<i>Trigonella ornith.</i>	<i>Trigonella ornith.</i>	<i>Trigonella ornith.</i>
<i>Trifolium fragiferum.</i>	<i>T. fragiferum.</i>	<i>T. fragiferum.</i>	<i>T. fragiferum.</i>
<i>Trifolium procumbens.</i>	<i>T. procumbens.</i>	<i>T. procumbens.</i>	<i>T. agrarium.</i>
<i>Trifolium minus.</i>	<i>T. minus.</i>	<i>T. minus.</i>	<i>T. procumbens.</i>
<i>Trifolium filiforme.</i>	<i>T. filiforme.</i>	<i>T. filiforme.</i>	<i>T. filiforme.</i>
<i>Lotus corniculatus.</i>	<i>L. corniculatus.</i>	<i>L. corniculatus.</i>	<i>L. corniculatus.</i>
<i>Lotus major.</i>	<i>L. major.</i>	<i>L. major.</i>	<i>L. corniculatus.</i>
<i>Lotus angustissimus.</i>	<i>L. angustissimus.</i>	<i>L. angustissimus.</i>	<i>L. angustissimus.</i>
<i>Lotus hispidus.</i>	<i>L. angustissimus.</i>	<i>L. angustissimus.</i>	<i>L. angustissimus.</i>
<i>Anthyllus Vulneraria.</i>	<i>A. Vulneraria.</i>	<i>A. Vulneraria.</i>	<i>A. Vulneraria.</i>
<i>Oxytropis Halleri.</i>	<i>O. uralensis.</i>	<i>O. uralensis.</i>	<i>O. uralensis.</i>
<i>Oxytropis campestris.</i>	<i>O. campestris.</i>	<i>O. campestris.</i>	<i>O. campestris.</i>
<i>Astragalus hypoglottis.</i>	<i>A. hypoglottis.</i>	<i>A. hypoglottis.</i>	<i>A. hypoglottis.</i>
<i>Astragalus alpinus.</i>	<i>A. alpinus.</i>	<i>A. alpinus.</i>	<i>A. alpinus.</i>
<i>Astragalus glycyphyllos.</i>	<i>A. glycyphyllos.</i>	<i>A. glycyphyllos.</i>	<i>A. glycyphyllos.</i>
<i>Vicia hirsuta.</i>	<i>V. hirsuta.</i>	<i>V. hirsuta.</i>	<i>V. hirsuta.</i>
<i>Vicia tetrasperma.</i>	<i>V. tetrasperma.</i>	<i>V. tetrasperma.</i>	<i>V. tetrasperma.</i>
<i>Vicia gracilis.</i>	<i>V. tetrasperma.</i>	<i>V. tetrasperma.</i>	<i>V. tetrasperma.</i>
<i>Vicia sylvatica.</i>	<i>V. sylvatica.</i>	<i>V. sylvatica.</i>	<i>V. sylvatica.</i>
<i>Vicia Orobus.</i>	<i>V. Orobus.</i>	<i>V. Orobus.</i>	<i>V. Orobus.</i>

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<i>Vicia Cracca.</i>	<i>V. Cracca.</i>	<i>V. Cracca.</i>	<i>V. Cracca.</i>
<i>Vicia bithynica.</i>	<i>Vicia bithynica.</i>	<i>V. bithynica.</i>	<i>V. bithynica.</i>
<i>Vicia sepium.</i>	<i>V. sepium.</i>	<i>V. sepium.</i>	<i>V. sepium.</i>
<i>Vicia lœvigata.</i>	<i>V. lœvigata (excl.).</i>	<i>V. lœvigata.</i>	<i>V. sativa.</i>
<i>Vicia hybrida.</i>	<i>V. hybrida (excl.).</i>	<i>V. hybrida.</i>	(Omitted.)
<i>Vicia lutea.</i>	<i>V. lutea.</i>	<i>V. lutea.</i>	<i>V. lutea.</i>
<i>Vicia sativa.</i>	<i>V. sativa.</i>	<i>V. sativa.</i>	<i>V. sativa.</i>
<i>Vicia lathyroides.</i>	<i>V. lathyroides.</i>	<i>V. lathyroides.</i>	<i>V. lathyroides.</i>
<i>Lathyrus Aphaca.</i>	<i>L. Aphaca.</i>	<i>L. Aphaca.</i>	<i>L. Aphaca.</i>
<i>Lathyrus Nissolia.</i>	<i>L. Nissolia.</i>	<i>L. Nissolia.</i>	<i>L. Nissolia.</i>
<i>Lathyrus hirsutus.</i>	<i>L. hirsutus.</i>	<i>L. hirsutus.</i>	<i>L. hirsutus.</i>
<i>Lathyrus pratensis.</i>	<i>L. pratensis.</i>	<i>L. pratensis.</i>	<i>L. pratensis.</i>
<i>Lathyrus sylvestris.</i>	<i>L. sylvestris.</i>	<i>L. sylvestris.</i>	<i>L. sylvestris.</i>
<i>Lathyrus palustris.</i>	<i>L. palustris.</i>	<i>L. palustris.</i>	<i>L. palustris.</i>
<i>Lathyrus maritimus.</i>	<i>L. maritimus.</i>	<i>L. maritimus.</i>	<i>L. maritimus.</i>
<i>Lathyrus macrorrhizus.</i>	<i>Orobus tuberosus.</i>	<i>Orobus tuberosus.</i>	<i>L. macrorrhizus.</i>
<i>Lathyrus niger.</i>	<i>Orobus niger.</i>	<i>Lathyrus niger.</i>	<i>Lathyrus niger.</i>
<i>Ornithopus perpusillus.</i>	<i>O. perpusillus.</i>	<i>O. perpusillus.</i>	<i>O. perpusillus.</i>
<i>Arthrolobium ebracteatum.</i>	<i>A. ebracteatum.</i>	<i>A. ebracteatum.</i>	<i>A. ebracteatum.</i>
<i>Hippocrepis comosa.</i>	<i>H. comosa.</i>	<i>H. comosa.</i>	<i>H. comosa.</i>
<i>Onobrychis sativa.</i>	<i>O. sativa.</i>	<i>O. sativa.</i>	<i>O. sativa.</i>
<i>Prunus communis.</i>	<i>P. spinosa.</i>	<i>P. communis.</i>	<i>P. communis.</i>
<i>Prunus Padus.</i>	<i>P. Padus.</i>	<i>P. Padus.</i>	<i>P. Padus.</i>
<i>P. Avium.</i>	<i>P. Avium.</i>	<i>P. Avium.</i>	<i>P. Cerasus.</i>
<i>P. Cerasus.</i>	<i>P. Cerasus.</i>	<i>P. Cerasus.</i>	<i>P. Cerasus.</i>
<i>Spiræa salicifolia.</i>	<i>S. salicifolia.</i>	<i>S. salicifolia.</i>	"Planted."
<i>Spiræa Ulmaria.</i>	<i>S. Ulmaria.</i>	<i>S. Ulmaria.</i>	<i>S. Ulmaria.</i>
<i>Spiræa Filipendula.</i>	<i>S. Filipendula.</i>	<i>S. Filipendula.</i>	<i>S. Filipendula.</i>
<i>Sanguisorba officinalis.</i>	<i>S. officinalis.</i>	<i>S. officinalis.</i>	<i>S. officinalis.</i>
<i>Poterium Sanguisorba.</i>	<i>P. Sanguisorba.</i>	<i>P. Sanguisorba.</i>	<i>P. Sanguisorba.</i>
<i>Poterium muricatum.</i>	<i>P. muricatum.</i>	<i>P. muricatum.</i>	<i>P. Sanguisorba.</i>
<i>Agrimonia Eupatoria.</i>	<i>A. Eupatoria.</i>	<i>A. Eupatoria.</i>	<i>A. Eupatoria.</i>
<i>Agrimonia odorata.</i>	<i>A. Eupatoria.</i>	<i>A. odorata.</i>	<i>A. Eupatoria.</i>
<i>Alchemilla vulgaris.</i>	<i>A. vulgaris.</i>	<i>A. vulgaris.</i>	<i>A. vulgaris.</i>
<i>Alchemilla alpina.</i>	<i>A. alpina.</i>	<i>A. alpina.</i>	<i>A. alpina.</i>
<i>Alchemilla conjuncta.</i>	(Excluded.)	<i>A. alpina.</i>	<i>A. alpina.</i>
<i>Alchemilla arvensis.</i>	<i>A. arvensis.</i>	<i>A. arvensis.</i>	<i>A. arvensis.</i>
<i>Sibbaldia procumbens.</i>	<i>S. procumbens.</i>	<i>S. procumbens.</i>	<i>S. procumbens.</i>
<i>Potentilla rupestris.</i>	<i>P. rupestris.</i>	<i>P. rupestris.</i>	<i>P. rupestris.</i>
<i>Potentilla anserina.</i>	<i>P. anserina.</i>	<i>P. anserina.</i>	<i>P. anserina.</i>
<i>Potentilla argentea.</i>	<i>P. argentea.</i>	<i>P. argentea.</i>	<i>P. argentea.</i>
<i>Potentilla intermedia.</i>	(Excluded.)	<i>P. opaca.</i>	(Omitted.)
<i>Potentilla verna.</i>	<i>P. verna.</i>	<i>P. verna.</i>	<i>P. verna.</i>
<i>Potentilla alpestris.</i>	<i>P. alpestris.</i>	<i>P. alpestris.</i>	<i>P. verna.</i>
<i>Potentilla reptans.</i>	<i>P. reptans.</i>	<i>P. reptans.</i>	<i>P. reptans.</i>
<i>Potentilla Tormentilla.</i>	<i>P. Tormentilla.</i>	<i>P. Tormentilla.</i>	<i>P. Tormentilla.</i>
<i>Potentilla fruticosa.</i>	<i>P. fruticosa.</i>	<i>P. fruticosa.</i>	<i>P. fruticosa.</i>

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<i>Potentilla tridentata.</i>	(Excluded.)	<i>P. tridentata.</i>	(Omitted.)
<i>Potentilla Fragariastrum.</i>	<i>P. Fragariastrum.</i>	<i>P. Fragariastrum.</i>	<i>P. Fragariastrum.</i>
<i>Comarum palustre.</i>	<i>C. palustre.</i>	<i>C. palustre.</i>	<i>Potentilla Comarum.</i>
<i>Fragaria vesca.</i>	<i>F. vesca.</i>	<i>F. vesca.</i>	<i>F. vesca.</i>
<i>Fragaria elatior.</i>	<i>F. elatior.</i>	<i>F. elatior.</i>	<i>F. vesca.</i>
<i>Rubus idæus.</i>	<i>R. idæus.</i>	<i>R. idæus.</i>	<i>R. idæus.</i>
<i>Rubus Leesii.</i>	<i>R. idæus.</i>	a var.	<i>R. fruticosus.</i>
<i>Rubus suberectus.</i>	As in Bab. Man.	<i>R. suberectus.</i>	<i>R. fruticosus.</i>
<i>Rubus fissus.</i>	"	a var.	<i>R. fruticosus.</i>
<i>Rubus plicatus.</i>	"	<i>R. suberectus.</i>	<i>R. fruticosus.</i>
<i>Rubus nitidus.</i>	"	a var.	<i>R. fruticosus.</i>
<i>Rubus affinis.</i>	"	a var.	<i>R. fruticosus.</i>
<i>Rubus latifolius.</i>	"	a var.	<i>R. fruticosus.</i>
<i>Rubus imbricatus.</i>	"	a var.	<i>R. fruticosus.</i>
<i>Rubus rhamnifolius.</i>	"	<i>R. rhamnifolius.</i>	<i>R. fruticosus.</i>
<i>Rubus Grabowskii.</i>	"	a var.	<i>R. fruticosus.</i>
<i>Rubus thyrsoides.</i>	"	a var.	<i>R. fruticosus.</i>
<i>Rubus discolor.</i>	"	a var.	<i>R. fruticosus.</i>
<i>Rubus leucostachys.</i>	"	<i>R. carpinifolius.</i>	<i>R. fruticosus.</i>
<i>Rubus carpinifolius.</i>	"	<i>R. carpinifolius.</i>	<i>R. fruticosus.</i>
<i>Rubus villicaulis.</i>	"	a var.	<i>R. fruticosus.</i>
<i>Rubus pampinosus.</i>	"	a var.	<i>R. fruticosus.</i>
<i>Rubus mucronatus.</i>	"	a var.	<i>R. fruticosus.</i>
<i>Rubus Salteri.</i>	"	a var.	<i>R. fruticosus.</i>
<i>Rubus macrophyllus.</i>	"	<i>R. carpinifolius.</i>	<i>R. fruticosus.</i>
<i>Rubus Sprengelii.</i>	"	a var.	<i>R. fruticosus.</i>
<i>Rubus Bloxamii.</i>	"	a var.	<i>R. fruticosus.</i>
<i>Rubus Hystrix.</i>	"	a var.	<i>R. fruticosus.</i>
<i>Rubus Radula.</i>	"	a var.	<i>R. fruticosus.</i>
<i>Rubus rudis.</i>	"	a var.	<i>R. fruticosus.</i>
<i>Rubus pallidus.</i>	"	a var.	<i>R. fruticosus.</i>
<i>Rubus Kœhleri.</i>	"	<i>R. glandulosus.</i>	<i>R. fruticosus.</i>
<i>Rubus fusco-ater.</i>	"	a var.	<i>R. fruticosus.</i>
<i>Rubus pyramidalis.</i>	"	a var.	<i>R. fruticosus.</i>
<i>Rubus Güntheri.</i>	"	a var.	<i>R. fruticosus.</i>
<i>Rubus hirtus.</i>	"	a var.	<i>R. fruticosus.</i>
<i>Rubus glandulosus.</i>	"	<i>R. glandulosus.</i>	<i>R. fruticosus.</i>
<i>Rubus scaber.</i>	"	a var.	<i>R. fruticosus.</i>
<i>Rubus Balfourianus.</i>	"	a var.	<i>R. cæsius.</i>
<i>Rubus corylifolius.</i>	"	<i>R. corylifolius.</i>	<i>R. cæsius.</i>
<i>Rubus nemorosus.</i>	"	a var.	<i>R. cæsius.</i>
<i>Rubus cæsius.</i>	"	<i>R. cæsius.</i>	<i>R. cæsius.</i>
<i>Rubus saxatilis.</i>	"	<i>R. saxatilis.</i>	<i>R. saxatilis.</i>
<i>Rubus Chamæmorus.</i>	"	<i>R. Chamæmorus.</i>	<i>R. Chamæmorus.</i>
<i>Dryas octopetala.</i>	<i>D. octopetala.</i>	<i>D. octopetala.</i>	<i>D. octopetala.</i>
<i>Dryas depressa.</i>	<i>D. octopetala.</i>	<i>D. octopetala.</i>	<i>D. octopetala.</i>
<i>Geum urbanum.</i>	<i>G. urbanum.</i>	<i>G. urbanum.</i>	<i>G. urbanum.</i>

BABINGTON.	LOND. CAT.	HOOKE & ARNOTT.	BENTHAM.
<i>Geum intermedium.</i>	<i>G. urbanum.</i>	a hybrid.	a hybrid.
<i>Geum rivale.</i>	<i>G. rivale.</i>	<i>G. rivale.</i>	<i>G. rivale.</i>

(To be continued.)

PLANTS OF THE POETS.

(*Milton, Comus.*)

“This evening late, by then the chewing flocks
Had ta'en their supper on the *savoury* herb
Of Knotgrass dew-besprent, and were in fold.”

Is the common Knotgrass (*Polygonum auriculare*) here intended, or some other Knotgrass? The distinction *savoury* does not seem applicable to the common Knotgrass, a *rank tough weed*, as we all know, and called by Shakspeare “hindering Knotgrass.”

The Spirit to the elder Brother speaks of “simples of a thousand names,” of “strange and vigorous faculties,” known to a shepherd lad.

“Among the rest a small unsightly root,
But of divine effect, he culled me out;
The leaf was darkish, and had prickles on it,
But in another country, as he said,
Bore a bright golden flower, but not in this soil,
Unknown and like esteemed, and the dull swain
Treads on it daily with his clouted shoon:
And yet more medicinal is it than that *Moly*
That Hermes once to wise Ulysses gave;
He called it *Hæmony*, and gave it me,
And bade me keep it as of sovran use
'Gainst all enchantments, mildew, blast, or damp,
Or ghastly furies' apparition.”

The editor of ‘Milton,’ the Rev. H. J. Todd, in a note on this passage, says it is not agreed whether Milton’s *Hæmony* is a real or poetical plant. Probably the editor of the ‘Phytologist,’ with his great knowledge of plants, both ancient and modern, indigenous and not indigenous, can inform his readers something of this *Hæmony*.

As to Homer’s “*Moly*,” there appears to be some question as to what we are to say it was. In book x. of the *Odyssey*, Mr. Pope translates the lines relating to it,

"Black was the root, but milky-white the flower ;
Moly the name, to mortals hard to find," etc.

In Cole's Dictionary, he says *Moly* is the Rue, or Herb-Grace ; and Webster says it is wild Garlick. But what do the modern botanists say about it ? S. B.

GENTIANA PNEUMONANTHE.

A Visit to the recently recorded Surrey Locality for Gentiana Pneumonanthe.

(From a Correspondent.)

Several years ago, I made a fruitless effort to obtain this rare plant. This was long before the days of railway travelling, whereby botany has been "made easy."

In those days, or in that remote period, after a walk of from fifteen to twenty miles, I found myself in the then, as now, retired village of Byfleet. I had spent rather too much of my time in botanizing between Ockham, near Ripley, and the "Hut," a little roadside inn, which was a hut, and no more, about thirty-five years ago, as those who knew the Guildford and Portsmouth road at that period well know. The hut is now, and was then (twenty years ago), a place where tolerable accommodation and frugal fare might be had, and at this latter visit it was a *hut* only in name. Here I was directed through the wood and across the meadows to Byfleet, in my way to Walton-on-the-Thames, so called to distinguish it from another Walton, viz. that on the hill, in the hilly, southern part of the county of Surrey.

It was pitchy dark ere I reached Byfleet, and further progress was both unprofitable and uncomfortable. It was necessary to act on the Horatian maxim, "*ubi tempestas rapit deferor hospes.*" The night compelled me to seek shelter as well as refreshment and rest. I will not, as one of our most ancient local botanists did, and as some of our modern brethren still do, describe either the hostelry or its hospitalities. Botanists can subsist on common and even scanty fare. Though they are liable to the cravings of appetite, like other mortals, the healthful nature of their pursuit, and the quiet, even tenour of their

thoughts while engaged in simpling, dispose them to relish food which is oftentimes neither savoury nor very nicely prepared. I remember only that I passed a sleepless night at this village inn, and those who tumble about on their beds all night, courting sleep in vain, now in one position, now in another, do not need to be roused up nor called in the morning. My hosts had told me how I could get out, and my bill being paid before I went to bed, and nearly twenty-four hours before I went to sleep, I was ready to start by daylight.

I believe St. George's Hill was my first destination. Botanists are not the only folks who have a *penchant* for hill-climbing; this is probably one of our national characteristics.

The hills of Surrey are not nearly so high as the Alps, nor are they so precipitous as the cliffs that flank Dover on both sides. I cannot say that I like them all the better for this. They have, however, one amiable feature in their character—their ascent is easy enough, and a stumble is not formidable to lith or limb,—a comfortable feeling to those who love their collar-bones and necks as well and wisely as I do.

I was very early on St. George's Hill, but my remembrances both of the plants and of the scenery have passed away like the early dews in the latter end of August. I did not see the *Gentiana Pneumonanthe*.

Walton Heath was my destination, and while hunting for the heath, I met a gentleman to whom I related my desires and disappointments, expressing my intention of going to breakfast, and giving up the search for the Calathian Violet. In a very friendly way, this accidental acquaintance earnestly dissuaded me from relinquishing my original intentions. He represented the loss of time and labour incurred on a more than twenty miles' walk. His remonstrances had the desired effect, and I was persuaded, to escape from his importunities, to go and consult a neighbour of his, a land-agent, who knew the entire country for many miles around Walton, and who would and could assist me in obtaining the object of my visit.

I went to this man as one goes who is conscious that he is sent on a sleeveless errand—such as purchasing strap-oil, buying birds'-milk, and such-like fanciful commodities. To him, however, I went, and, like one of the heroes of the '*Mabinogion*,' I was told by this land-agent that I must go to another, viz. to

the gardener of Lady Tankerville, an aged man, who had been known at Walton more than half a century, and who knew all the plants of both hemispheres,—of the four quarters of the globe,—and therefore could tell me all about the plants of Walton Heath.

Like the virtuoso who set out to investigate the history of the three black crows thrown up by a sick man, I went, and succeeded in finding this third sage. Like the former two, he received me courteously, and listened very patiently to the tale of my wishes and disappointments. He admitted that it was quite true that he had known the plant to grow near Walton, and that many years ago he had gathered it by the handful; but now, he said, the entire country around had been so much altered by drainage, enclosures, plantations, cultivation, and buildings, that he did not know where the *Gentiana* grew. I also hinted that the *Utricularias* and *Hottonia* would be very acceptable acquisitions.

Like an aged warrior, who feels momentarily a martial glow when the implements of his profession are suggested, and especially when the encounters of his youth are brought to his recollection, this good man remembered the pleasures of his earlier days, when the gorgeous floral productions of the tropics had not caused him to forget the humble attractions of the native plants of his own land. He said if I would wait till his young men had done watering, he would let me have either of them or both of them for the day, and that they should ramble with me wherever I listed, and should also assist me by their local knowledge. They took me, indeed, to parts of the common where *Drosera rotundifolia*, *D. intermedia*, and *Rhyncospora alba* grew in abundance. But they did not know *Gentiana Pneumonanthe*, nor the *Utricularias*, nor the Water-Violet; they had never heard anybody speak of these plants, and they did not know where to look for them. The youths did not mislead me, which is more than could be said of the older men of Walton.

I have had many unsuccessful hunts for this plant in Sussex as well as in Surrey, but the above may be sufficient to show that it does not *now* grow on every moist heath, nor even on every part of the heath where it does grow.

The place where we found the plant last Friday, the 21st of September, 1860, was discovered accidentally by some children

who were gathering wild-flowers near Chobham, three or four years ago. I was shown some of the withered plants, and on inquiry learned the precise spot where they grew. This was subsequently published in the 'Phytologist,' and it was to prove, or rather to see, this station, that we started from London *vid* Chertsey on the day above stated. Gentle reader—all botanical readers are gentle, and some of them courteous—do not surmise that the big-looking pronominal word *we* is editorial! It is the representative of two *bond fide* botanists who both saw and testify to what was seen. Although the record or report is necessarily made by one, the plant was seen by both.

The easiest or plainest directions to this station are as follow. If from London, first go to Chertsey by rail. Next go on the Chobham road a mile or two, and then inquire for Squire Tringham's. The cottagers or dwellers about the roadside will direct the inquirer to a small beer-shop, or rather a small shop for the sale of beer, or, better still, a small house licensed to sell beer to be drunk (not drunken) on the premises. The tenant or landlord of this house will show the seeker where Mr. Tringham's private stand stood, whence he and his friends viewed the military evolutions when the camp of Chobham occupied several miles of these extensive, heathy tracts, in 1853, a year or two before the Crimean war. The stand was almost opposite the gable end of the beer-shop, and between the latter place and the site of the former there is a wet, grassy, rushy part of the common or heath, which, like a tongue, stretches or extends between the plantations. The solitary beer-shop is at one end of a wood or plantation, very near the summit-level of the rise, and the site of the stand was at the upper extremity of the opposite plantation, also near the ridge of an opposite hill. Between these two plantations is the rushy part of the common as aforesaid. The *Gentiana* is not here, viz. between the beer-house and the site of the stand, but it is in the much more extensive and wider part of the heath, viz. behind the plantation opposite to the end of the beer-shop, which is on the left of the road when going to Chobham from Chertsey, and both the plantations are on the left side of the road, and the *Gentiana* is beyond the second plantation, on the same side of the road as the beer-house is.

The part of the heath where this rare plant grows, or where we saw it, is very extensive, and if the visitor come from Chertsey,

he should leave the Chertsey and Chobham road at the beer-shop; he should pass close by this solitary, small house, having it on his left; then he should cross over the common to the extremity or horn of the plantation, which is the second on the left of the road, not forgetting to cross the rushy part of the common between the two narrow plantations. After passing the end of the plantation and a well, which supplies very indifferent water, keeping the plantation on the left, having Mr. Tringham's house and wooden gate in sight, the visitor should look for the Gentian, which appears here and there (sparingly, this season, 1860,) all along, not much more than fifty or a hundred yards from the plantation.

We sought for it beyond the flaming red house, just within the ring-fence, and did not see it. Also we looked for it further up the hill at a greater distance from the plantation, but with no success. The few plants seen were between the spring-head, near the upper end of the plantation, on the left, and the wooden gate leading to Mr. Tringham's house from the heath.

The distance to the locality of this *Gentiana* is three miles from Chertsey station. The botanist may find them long miles, especially if the temperature be high; and if he is familiar with London cabmen and their estimates of distance, he will learn that the rustics of Surrey give more liberal measure than Mr. Cabby allows when you settle with him for the hire of his vehicle.

From this place we struck across the extensive moor at right angles to the Chertsey and Chobham road, and made for Windlesham. On our way thither, just upon the verge of the heath, nearly opposite the first of the cottages which is sprinkled here and there upon the left, there is a peaty, spongy bog abounding with the plants common to such places.

Hypericum Elodes was seen in the ditch by the roadside. The writer was reminded that the specific name should be *Helodes*, if the recommendation of a critic who proposes to substitute *Heleocharis* for *Eleocharis* is to be carried out. In print it would appear more consistent to retain the aspirate, but for cockneys who, as a rule, omit the *h* when printed or written, and give the rough or aspirated breathing when there is none, *Elodes* will be pronounced, *Græco more, Helodes*. If it were written or printed *Helodes*, which is the right form, the genuine cockney would pro-

nounce the word *Elodes*. But if we be wise, we shall concern ourselves more about our plants than about grammatical niceties. There are readers of the 'Phytologist' who love plants well, and want to have information about the things themselves rather than subtle disquisitions about their names.

The pretty *Anagallis tenella*, *Scutellaria minor*, *Drosera rotundifolia*, *D. intermedia*, *Rhyncospora alba*, and many other more common plants, abounded in this locality. We only observed these *en passant*, but were flying at higher game, which we had the good hap to bag an hour at least ere the sun became invisible behind Aldershott Hill.

We went on through Windlesham to Bagshot, by the church of the former, which was on our right. The way to the not very small portion of Bagshot Heath where we discovered the prize, is as follows:—

The road from Windlesham church joins the Bagshot and Guildford road at a right angle; the right-hand way is to Bagshot, not half a mile distant, and the left is to Guildford, probably a dozen miles off. To reach the part of the heath where *Schænus nigricans* grows, the botanist, after arriving at the junction of the Windlesham with the Bagshot and Guildford road, should take the road to the left, as if going to Guildford. At about half a mile's distance from the junction, or, perhaps, three-quarters of a mile, there is a plantation of firs on the right, and there is a gate at the Bagshot side. Here you, whoever you be, may enter, and pass through the little wood, cross the fence beyond, steer across in the direction of the Bagshot or Frimley ridges, and you will first come to a very wet depression, or boggy hollow, with a path across. This hollow may be distinguished by the name of Bogmyrtle Hollow, not Sleepy Hollow, where you may replenish your herbarium with specimens of *Myrica Gale* in all states, except in flower. Ascend the next eminence, keeping the same track, having the heights rather on the right than right ahead, and in the second depression, which may be named *Schænus nigricans* Hollow, you will perceive little else but *Sphagnum*, *Drosera*, and large tufts of *Schænus nigricans*, enough to supply all the botanists of Europe with specimens of this, to us, rare species.

A dozen years ago, one of us knew another station, which has disappeared, and probably turnips, barley, and clover—we will

not say have usurped—but have taken its place. Our hearts were gladdened, and our eyes sparkled, when we discovered a second station where this floral gem may grow and blossom again unseen for many generations. The improvements in this quarter will probably be an increase of plantations, and the Black Bog-rush may thrive there unmolested by the surrounding trees.

The place where we saw the plant is not half a mile from the Guildford road, and about a mile from the village of Bagshot; and if the directions and indications above given be well followed, the seeker can hardly miss finding the object of his search.

We must, in conscience, enter a *caveat* against making too free with the *Gentiana* at Chobham, because in some years—this, for example—it is not very abundant. There will be no harm done to future generations even though you fill your vasculum with the rare plant of Bagshot Heath; the tumps of this rare Rush would load all the carts and waggons of Bagshot, and probably leave enough to fill those of Frimley. There is no risk of impoverishing this locality.

This and the *Gentiana* are not the only rare plants of this extensive and barren part of West Surrey. There were other scarce species, and probably are still, about Windlesham, Bagshot, and Frimley, but we had no time to look for them. We were not much less than five miles from the Farnborough station of the London and South-western Railway, and had only one hour and forty minutes remaining, and had some rough ground to pass through ere we reached the main road.

Agrostis setacea is the only grassy herbage between the *Schænus* Hollow and the ridge, but there is plenty of that to form a fine, soft, elastic sward, wherever grass will grow.

The most remarkable plants observed by us, chiefly on the hedge-banks by the waysides, were *Hypericum boreale*, of extraordinary luxuriance; on one specimen we counted 104 flowers and flower-buds. This is the headquarters of this plant.

Hieracium umbellatum, in its most typical form, viz. with rather broad and tapering, soft leaves, and with the flowers in true umbels; not with the rigid habit, and very narrow and numerous leaves, and often with but one flower, its common form on Hayes Common, in Kent. A one-flowered example cannot be the normal form of *H. umbellatum*.

Hypericum calycinum was very well naturalized in two places. One was between Chertsey and Chobham—perhaps about half-way between the railway station at Chertsey and the place where the *Gentiana* grows. The other is near Windlesham. It is not difficult to account for their appearance in both these localities. Near Windlesham *Silene anglica* was seen growing in the ditches by the roadsides, and *Apera Spica-venti* on rubbish. The fields far and near were flaming with the bright-yellow flowers of the corn Marigold.

If this part of the country were visited at an earlier period of the season, when the days are longer and brighter, a richer booty might be acquired on these hills, heaths, and *Sphagnum*-bogs. But *Agrostis setacea*, though long past its season when we were there, *Schænus nigricans*, and *Gentiana Pneumonanthe*, are no inconsiderable acquisitions, and especially when made at the autumnal equinox.

A.

EXTRACTS FROM CORRESPONDENCE.*Notice of a few of the Rarer Plants of Horton, Bucks.*

Does this name appear in the annals of botany for the first time? If it has been hitherto neglected by the amiable brotherhood, it must not be blamed, for it is not without its own peculiar attractions. It is situated on the right of the London and South-western Windsor line, about twenty miles from London, two from Datchet, and three from Windsor, on the road between Slough and Stanwell, on a very rich alluvial soil, with the river Colne passing close by its doors. It is distant about a mile from the Wraysbury station of the above-named railway, and is only a short hour's ride from the Metropolis.

If Horton be not the prettiest village in England,—and there are many candidates which advance a claim to this honour,—it certainly is one of the quietest and the least pretentious of all our sequestered rustic nooks and corners. Its only public edifices are its church and its little inn. Every village has a church, or should have one, but every village has not an inn. Horton has an inn and a beer-shop too, but shop of any other kind your reporter saw none. He will not affirm that there is no shop in

the place; but if there be, it is a very humble one. He can say that there is no post-office, but there is something which answers all the purposes of a receiving-house, viz. a box fixed into the churchyard wall, into which the correspondence of Horton is deposited till the pedestrian postwoman comes at 6 P.M. to take out the missives and transmit them to their respective destinations. This novel scheme of Sir Rowland Hill's possesses one advantage over the usual letter-receiving houses in country places, viz. that the postmaster or postmistress is no longer able to read the letters of their neighbours, entrusted to them for conveyance, but not for perusal.

There is one disadvantage attending this recent invention, viz. that the letter-writer and letter-sender cannot be supplied with stamps in the village.

The perverse ingenuity of the opponents of progress is both amusing and instructive. When the penny-postage plan was first established, it was pretended to be a grievance that the sender had to provide himself or herself with a penny to prepay his epistle, obstinately forgetting that the shopkeeper would give him change. It was deemed an intolerable hardship when this money prepayment was altered into payment by a penny stamp; and loud were the lamentations over the departure of the good old times, when these new-fangled ways were in the deep and distant future, and when a letter was received only once a week, or seldomer, at the moderate charge of from fourpence to eighteenpence, if the said letter were from any part of the British Isles.

There were growlers and grumblers who muttered and maundered about the substitution of hollow cylinders with a slit at their apex, for the usual receiving-houses. But as the new system prevented all prying into the letters of the receiver's neighbours, this grievance was quickly forgotten.

But your special correspondent has to deal with botany, rather than with social improvement; and as an apology to those who may cavil because he has not stuck closely to his text, he enters the above as a hint to the fraternity, when they visit Horton, to take note-paper, etc., with them, and not to forget the postage-stamps.

The soil of Horton is a thick alluvial deposit on the gravel, in some places from four to six feet in thickness, and it is quite, or

almost quite, flat. The Colne and its tributary streamlets water the meadows, and this season (1860) they were watered rather abundantly; the flood had not only submerged much of the meadow land, but a considerable part of the corn land. The shocks in a field near Wraysbury station were standing several inches deep in water about the latter end of August.

At Midsummer some of the meadows, or their margins at least, are gaily decorated with the bright purplish-blue flowers of *Geranium pratense*. Here the plant is nearly as abundant as Buttercups are in May. In the latter end of August this plant, or rather its flowers, had disappeared, and its place was but very partially supplied by *Lysimachia vulgaris*, a plant which is far from common, although this property might be inferred from its name, *vulgaris*. About Horton a hundred examples of *Geranium pratense* might be counted for one of *Lysimachia vulgaris*. The latter is not only unfrequent, but it is anything but *vulgar* or common in its appearance. It produces a fine, tall, straight, bushy stem, with trusses of elegant, bright-yellow flowers at its summit. It is a patrician among the subjects of Flora's domain; noble and graceful, seldom mingled with the humbler denizens, but growing apart among compeers suitable to its own dignity, the aristocratic occupants of the moist hedge-bank. This stately plant grows between Horton and Datchet, on the left-hand side of the road to Windsor.

Butomus umbellatus, the Flowering Rush, is another grand aquatic plant belonging to Horton. The Yellow Loosestrife is not, strictly speaking, an aquatic, but rather a marsh plant. The Flowering Rush is strictly an aquatic. This handsome plant grows close to the village, on the left side of the road to Stanwell, close to the bridge over the Colne, and near the mill.

A little further on the road from Horton to Stanwell there is a marshy waste bit of ground called the Gravel-pit, partly peaty, where gravel is sometimes dug (at present it is full of water), bounded by the road to Wraysbury station and the Stanwell road above mentioned. In the marshy parts of this small space there grow the following plants:—*Sium angustifolium*, a common plant in many places; *Pedicularis palustris*, a plant which grew not very long ago on Wimbledon Common, in the ravine between the windmill and the village. It has disappeared(?) in the latter station, which is now undergoing extensive alterations, not re-

pairs, as builders say. The butts are erected or erecting on the slope of the ravine which is furthest from Putney, and the lower part of the bog is drained, bridged, etc. The rarest plant observed in this corner at Horton is *Stellaria glauca*; *Anacharis Alsinastrum* would have been deemed one of the *rarissimæ* (the very rarest) a dozen years ago. Unhappily it is now too common in water about Horton, as everywhere else. This summer (August, 1860) it was flowering profusely.

Scutellaria galericulata, a very handsome if not a rare plant, grows here, and also along the banks of the Colne.

Hydrocharis Morsus-ranæ abounds everywhere in the ditches; and *Hottonia palustris* is not very far distant, probably near the village; certainly between Horton and Staines.

Ænanthe peucedanifolia, which has perished in Battersea Fields (?), was once believed to grow in a meadow on the right-hand side of the road to Wraysbury station, nearly opposite the place where the *Stellaria glauca*, etc., grow. This plant, viz. the *Ænanthe*, will probably, when examined and identified, turn out to be only a large form of *Æ. fistulosa*.

There is no doubt about *Æ. fluviatilis*, Coleman, being a plant of Horton. Whether it be specifically distinct from the known British species of this genus, or non-distinct, it is easily recognizable from all of them by its appearance and habit.

I have seen several examples of this *Ænanthe*, and all of them in running water, which rises in Herts or passes through this county. Is this plant known anywhere else in England, except in the counties of Herts, Bucks, and Middlesex?

It has also been observed that this plant rarely flowers. It often produces abundance of radical leaves, sometimes throws up a stem, but its flowers and fruit are desiderata with your correspondent. Perhaps the reverend author of the 'Flora Hertfordiensis,' or Mr. E. Edwards, could enlighten some of their brethren by giving information about the history, habits, and economy of the plant.

Has it been detected in England only? Or is it known on the Continent?

Some months ago,—above twelve,—a correspondent from near Ross, in Herefordshire, sent to the writer of this account of the plants of Horton an *Ænanthe* which was apparently distinct from all the British species of this genus. This plant, which was alive

when despatched by the sender, was nearly dead before it reached the receiver. Another plant, or example, or specimen, would be most thankfully received. I unfortunately have neither the name of the kind correspondent who sent the example above mentioned, nor his address either. But if this fortunately happens to meet his eye, he will remember the sending of the plant, and probably the address of the person to whom it was sent.

The few plants observed at, or very near Horton, may be deemed the first-fruits of the Flora of Bucks; and they are pledges of a plentiful harvest remaining to be gathered in by any botanist who has the time and the opportunity of investigating the productions of this county, almost a *terra incognita* to English botanists.

There is an *Impatiens* at Denham, near Uxbridge, a plant known by a single incomplete specimen, and by imperfect reports which have been more or less current for some years, and it would be very desirable to have this doubt cleared up.

Marlow, not very remote from the before-mentioned localities, has a rich Flora, as several of the examples chronicled in some of the earlier numbers of the Old Series of the 'Phytologist' abundantly prove. It is earnestly to be wished, for the sake of the progress of British botany, that local botanists may again be found in these respective parts to search out and record the native productions of this county.

The list of plants communicated with these remarks is but a short one, and it is humbly submitted rather with the view of inducing botanists to visit such comparatively unknown or unnoticed places, than to tell them what grows there. English botanists, like those of every other country,—for human nature is the same everywhere, only modified by circumstances,—follow each other's tracks, as sheep follow the bell-wether; they seldom hunt up the productions of new localities. But if novelties are still discovered on such well-trodden stations as Meikleham, Boxhill and Reigate, may not some rarities be expected on the southern part of Bucks, on the neutral ground, on the transition series of deposits between the chalk and the diluvial drift, with its alluvial deposits?

A naturalized exotic, for it is well established in many parts of England, and it is reported as thoroughly wild in Ireland, and probably wild in Scotland, viz. *Hypericum calycinum*, is pretty

well established near the entrance into Horton, by the road or path, for it partakes of both characters, leading from the Wraybury station to the village.

It has evidently spread from the interior over the bank, and downwards into the ditch, but it is in a fair way of increasing its area. The uninitiated in the science cannot be expected to know the distinctions said to be established between natives, denizens, colonists, spontaneous, apparently introduced, and certainly naturalized or only accidental plants, and hence it is charitable to give them descriptions of all such plants as they are likely to find, and to leave to the botanical geographer the settlement of conflicting claims to nativity and nationality. R.

Bryology of the Neighbourhood of Oxford.

By H. BOSWELL.

As far as I am aware, no account of the Bryology of Oxfordshire has been given to the botanical world since the publication of Sibthorp's 'Flora Oxoniensis,' near seventy years ago, with the exception of some three or four species mentioned in Purton's 'Midland Flora,' by Mr. Baxter. Since the days when Sibthorp wrote, much progress has been made in our knowledge of Bryology, and through the works of Bruch and Schimper, of Wilson, etc., any tyro in the science knows much at the present day that was hidden from that excellent botanist. Indeed the knowledge of the inflorescence has put the study of Mosses on a new basis, and every year adds one or two to our list of species. But while the Lancashire botanists have been assiduously working at the Bryology of the north, and others have done almost as much for the counties of the southern coast, the midland counties have, as far as I am aware, been quite neglected in this respect, and much remains to be ascertained before the distribution of British Mosses will be mapped out as accurately as that of the Flowering Plants are. As a contribution towards the geographical range of these plants, I send you the following notes upon the Mosses growing in the neighbourhood of Oxford, so far as I have been able to see them during sundry rambles in the course of two winters, those of 1858-9 and 1859-60, with the intervening summer.

The localities mentioned are mostly within a ramble of from two to five hours from the city, and mostly in Oxfordshire, but Bagley Wood, Cumnor, and Wytham Wood are over the border, and included in that portion of Berkshire that thrusts itself up to the walls of Oxford. The list is probably imperfect, and additions might be made to it by better bryologists than myself, or by taking a wider range for close examination; still the additions would, I believe, not be numerous, in the vicinity of the city at least; for the locality is by no means a particularly favourable one, especially for the summer Mosses, of which I have seen but few, and those occurring very unfrequently at best. After April is over the air becomes far too dry for these delicate little plants, which prefer the more moist and pure atmosphere of alpine or maritime regions. It is true we have had moisture enough this summer of 1860, and in consequence *Tortula rigida*, *T. ambigua*, and *T. aloides* were all seen in fruit in the middle of August, being three months before their usual time.

The total number of species enumerated as having fallen under my own observation is, I think, 120, to which may be added some three or four mentioned by Sibthorp, but which I have failed to find, and one or two others. In the case of *Hypnum Crista-castrensis*, Sibthorp was probably in error, as I have remarked below, and I imagine the report of *Bryum julaceum* from the Botanic Garden walks to be equally erroneous. There might be some few, say five or even ten species, added in the county; but this would probably be the limit. It thus appears that we have rather more than a quarter of the British species, of which there are now about 460 enumerated; and this proportion is, I suppose, as good as can be expected in such a district. The majority of them grow in woods, thickets, and moist hedge and ditch banks, as far as species are concerned; but with regard to individual plants, probably the greatest number would be found on walls, especially those capped with the limestone mud, as *Pottia*, *Tortula*, etc. The tree-growing species are by no means common, with the exception, perhaps, of *Orthotrichum affine*, and the barren *Leucodon sciuroides*, which are pretty frequent, and *Liskea sericea*, common enough. I fear those plants loving rocks and river-sides, such as *Trichostomum rigidulum*, are altogether wanting, nor can we expect any of those species having a preference for sandstone, there being no fitting habitat for them.

- Sphagnum cymbifolium*. Bagley Wood; barren.
- Sphagnum squarrosum*. Powder Hill Copse; barren, growing on a moist bank, among grass, under the shade of bushes.
- Phascum cuspidatum*. Roadsides, fields, etc.; frequent. Fruit, winter.
- Phascum bryoides*. Edge of a ploughed field adjoining Headington-Wick Copse; sparingly (1859). February.
- Phascum subulatum*. Sandy banks, Shotover Hill, Nuneham, Bagley Wood. March, April.
- Weissia controversa*. Sandy, turfy hedge-banks, Shotover, near Bayswater Mill; near Stanton St. John's; near Islip by the Cherwell. April.
- Dicranum varium*. Shotover Hill; Bullingdon Boss; Bagley Wood, by the side of drains; Iffley road, etc. November, December.
- Dicranum heteromallum*. Sandy banks, Shotover Hill; Headington-Wick Copse; Bagley Wood, etc. Nov., Dec.
- Dicranum cerviculatum*. Bullingdon Bogs, where turf had been overturned; sparingly. June, July.
- Dicranum scoparium*. Fruit, Shotover Hill and Bagley Wood; sparingly; frequent barren. July, August.
- Dicranum palustre*. Shady banks, Shotover Hill; Bagley Wood; Wychwood Forest. Barren.
- Leucobryum glaucum*. Woods near Nettlebed. Barren.
- Ceratodon purpureus*. Sandy and gravelly banks at Shotover, Bagley Wood, etc.; old walls, Islip, Ferry Hincksey, etc.; pretty frequent. March and April.
- Campylopus torfaceus*. Light sandy ground, among bushes; Shotover Hill, Headington-Wick Copse, Birch Copse, Chilswill Farm. (Not October) April.
- Pottia cavifolia*. Mud walls and banks.—This little species grows abundantly on the limestone mud with which walls are topped; millions may be seen sometimes in a winter's walk in some districts; it often accompanies three or four species of *Tortula*. The variety *gracilis* occurs occasionally, as at Noke, Islip, Cowley, etc., and might be taken for a *Tortula*; it looks very different from the common form. Fruit, November to February.
- Pottia minutula*. Banks by the roadside; Cumnor Hill; very scarce, only a dozen capsules. January, 1859.

- Pottia truncata*. Newly turned soil in moist places; Headington-Wick Bog; drains in Bagley Wood. February.
- Anacalypta lanceolata*. Turfy walls, banks; Shotover Plantations, Noke, Stanton St. John's, Botley, Hincksey, etc.; fine plants. February, March.
- Didymodon rubellus*. Shady old walls, banks; Rose Hill, Stanton St. John's, South Hincksey, Headington-Wick Copse. October, November.
- Tortula rigida*. Walls of limestone mud, often in company with the next, but less frequent; known from it by the elliptic-lanceolate capsule, generally smaller size, etc.; Marston Lane, Islip, Salford near Chipping-Norton, etc. November, January.
- Tortula ambigua*. Mud-capped walls; abundant near Oxford, Bicester, etc. Winter.
- Tortula aloides*. Turf walls, at Rose Hill, at Hincksey, and near Bayswater Mill; embankment of stones and turf, Shotover Plantations. I have not met with it on clay banks. Fruit November to February.—Sometimes occurs barren, when it may be known by the compact tufts it forms, and by the acute leaves, much longer than in the two last. It is rather rare here.
- Tortula unguiculata*. Gravelly banks, old walls; common. Winter.
- Tortula fallax*. Ditch-bank, Iffley road; side of drain in bog near Stow Wood; sparingly, in fruit; common in barren state. November and December.
- Tortula revoluta*. Walls; by the road near Shotover Hill, Forest Hill, etc.; frequent. April.
- Tortula Hornschuchiana*. Rare; wall near Noke, in tolerable plenty, 1860. April. Easily known from the last by the acute leaves and the lax tufts, easily separating; it is a much more delicate plant.
- Tortula convoluta*. Walls, etc.; Shotover, near Stoke; Hincksey; Cumnor. April.
- Tortula muralis*. Walls, stones, etc.; common. Spring.
- Tortula subulata*. Formerly abundant in Shotover Plantations, but now almost extinct through clearing for cultivation. Headington-Wick Copse; scarce. March, April.
- Tortula latifolia*. On one or two Willows by the Cherwell Bank. Barren.

- Tortula lævipila*. Willows by the Cherwell; by the Isis near Nuneham; Wychwood Forest; scarce. April, May.
- Tortula ruralis*. Walls, stones, thatch, in fruit occasionally; sandy banks, near Stow Wood; barren. March, April.
- Cinclidotus fontinaloides*. Cherwell, near Water-Eaton; Isis, by Godstow. April.
- Encalypta vulgaris*. Walls, etc., Shotover Plantations; near Bayswater Mill; Hincksey; Cumnor; Salford, near Chip-ping-Norton, etc. March.
- Schistidium apocarpum*. Walls, etc.; occasionally. February, March.
- Grimmia pulvinata*. Walls, etc.; common. March, April.
- **Racomitrium canescens*. "Shotover Hill," Sibthorp. I have sought it in vain: probably extirpated by cultivation.
- Orthotrichum cupulatum*. Variety *riparium* (*O. nudum* of Dickson). On a stone by the Cherwell, near Sparsey Bridge. April, May.
- Orthotrichum anomalum*. Shotover Hill; Chilswell Hill; near Noke; Ferry Hincksey, etc. May.
- Orthotrichum tenellum*. On a Willow, by the Cherwell, near Park Town, and again a mile higher on the opposite side; between Wytham and Botley. May. Growing with *O. affine* and *O. diaphanum*.
- Orthotrichum affine*. Trees; frequent. June.
- Orthotrichum Lyellii*. Frequent in barren state; fruit rare. Bagley Wood; Nuneham Park; Hill Copse, near Stanton St. John's. June, July.
- Orthotrichum diaphanum*. Trees; occasionally, especially on old Willows by the Cherwell; more rarely on stones. March, April.
- Orthotrichum leiocarpum*. Trees; always sparingly. Edge of Bul-lingdon Bogs; Wychwood Forest; Bagley Wood; Birch Copse. February, March.
- Orthotrichum crispum*. Bagley Wood, in company with next, but less plentifully. Fruit ripe in July and August.
- Orthotrichum Bruchii*. Bagley Wood, in tolerable plenty in one part of the wood; Wychwood Forest, scarce. Fruit ripe, September.
- Zygodon viridissimus*. On one Willow by the Cherwell. Barren.

(To be continued.)

Review.

Species Filicum; being Descriptions of all known Ferns. Illustrated with Plates. By WILLIAM JACKSON HOOKER, K.H., D.C.L. Oxon., F.R.S., F.L.S., etc., and Director of the Royal Gardens of Kew. Parts XI. and XII., or Vol. III., Parts III. and IV. (completing the Third Volume). London: Pamplin.

The reviewer of the above-named work has simply to announce the publication of the recently issued Parts, and to give a brief outline of their contents. As many of his readers have read and studied the work for themselves, they are better judges of its merits than he is, and can dispense with his opinion. They will doubtless be pleased to hear that Part XIII. will shortly be published.

The recent issue of this valuable work contains the completion of the large genus *Asplenium*, of which 305 species are here enumerated and described. The last entered species is *A. Ceterach*. The learned author advances the following reasons for restoring this British Fern to its ancient place in the great family to which it belongs.

“This well-known Fern, as a genus, had no resting-place, and now I have ventured to restore to it its old Linnæan name. Most botanists have considered the *sori* to be destitute of involucre, and I have ranked it among the *nudisori*. Mr. W. Wilson was the first to direct my attention, in 1828, to the presence of a narrow involucre of an *Asplenium*, such as we have figured it in the ‘Genera Filicum,’ and in the ‘British Flora,’ and M. Fee has detected and represented a much more distinct involucre in the var. *aureum*.”

It is to be hoped, for the sake of the younger members of the increasing family of botanists, that the plant will be permitted to remain where it has obtained a situation after wandering about so long, and after being alternately admitted and rejected by several more or less numerous and respectable groups of Ferns. The history of its migrations may be safely left in the hands of Mr. Moore, with the remark that the narrative of its travels through the space of ten decades will not be so interesting as the travels of Ulysses.

The distribution of *A. Adiantum-nigrum*, viz. *a*, the common

form; β , *acutum*, Pollin; and γ , *obtusum*, Moore, is as follows:—"Throughout Europe, Greece,* and Northern Asia, Turkey, the shores and islands of the Mediterranean, North and South Africa, Madeira, the Canaries, Azores, Cape de Verd Islands, St. Helena, Abyssinia, Northern India, Afghanistan, Java, etc."

The near relative of *A. Adiantum-nigrum*, viz. *A. lanceolatum*, is distributed over "the warmer parts of Europe, especially Greece, Spain, Portugal, the islands of the Mediterranean, extending north to the southern parts of Great Britain." We have seen it in Sussex, and it grows rather plentifully in Somersetshire, not far from Bristol, especially on the road to Brockley Comb, which is about nine miles from the city.

The next British species, *A. fontanum*, is stated to be rare in Britain. It is so rare that there are some British botanists who never saw a truly wild example of it in these islands. Our author records as its habitats France, Germany, Spain, Italy; only the two former can be deemed in "the centre of Europe." Though rare in Great Britain, it is more than probable that it is a true native of England.

On *Asplenium Filix-femina*, which even in our day has seen many changes and had to make many shifts, the learned author sensibly remarks: "Botanists have encumbered even the British plant with a host of synonyms, of which the careful Moore has enumerated eighteen different specific names, and has thought fit to record and name and define thirty-one varieties. This Fern has a large geographical range, and is subject to much variation in the size and shape of its fronds."

Our readers will be delighted to be informed that the rare *Asplenium germanicum* is not unknown in the south-west of England, where it was collected by Mr. N. B. Ward, who found it on a stone wall near Oare, on the borders of Somerset and Devon. Our readers were informed years ago that it had been found in Cumberland, by the Rev. W. H. Hawker, and there were obscure intimations of its discovery on the confines of Devon. This fact may not be considered as sufficiently established, and we are pleased to see it recorded in a national and standard work like the 'Species Filicum.'

* Modern geographers include Greece and Turkey (the western parts of the empire) in Europe, and some of the shores and islands of the Mediterranean are in this quarter of the globe.

Few readers of the 'Phytologist' would wish to have a specimen of this most elaborate descriptive history of Ferns. The objects described are universally admitted to be the most interesting and attractive of all the subjects of the Vegetable Kingdom; and the few readers who pursue this branch of botany will purchase and read, and judge of the work for themselves. It is believed that but few of these have an adequate appreciation of the immense labour and research bestowed on even a single page. The references to authorities for some species amount to forty, and twenty citations are not uncommon.

Those who read the 'Species Filicum' will find Mr. Moore's 'Index Filicum' a very useful, if not a necessary adjunct, to this very elaborate performance.

BOTANICAL NOTES, NOTICES, AND QUERIES.

AN AFTERNOON'S BOTANIZING IN NORTH DERBYSHIRE.

The most casual observer could not fail to note the total difference between the scenery of the millstone grit and limestone, and the tame aspect of the new red sandstone and the upper coal measures. And no less is the difference in their respective Floras. The present flying visit, having taken place just after a long season of wet weather, in the month of June, and consequently at a time of promise rather than of actual harvests for the vasculum-bearer, will be little more than a list of the Ferns met with, which, in my opinion, under the circumstances is a very good one. And in the first place I must premise that several of these are very rare in the neighbourhood of Manchester, our starting-point, though common enough in many parts of England. Leaving Whaley Bridge station, we steered at a brisk pace along the Buxton road. After about one mile's walking, we fell in with *Asplenium Trichomanes*, and *Scolopendrium vulgare*, both very luxuriant in the drainage-holes by the roadside. This set us in good spirits at once, as these Ferns are "cygni nigri" in the neighbourhood of Manchester, and common nowhere in South Lancashire, as far as I am aware. At two miles' distance from Whaley Bridge is Fernilee toll-bar; just past here is a bridge over a small stream. A fortunate look over this bridge revealed to our delighted eyes some fine plants of *Polystichum lobatum* with var. *lonchitidoides*; and flowering near, very abundantly, was the beautiful *Saxifraga granulata*. One or two *Hieracia*, not in flower, had found an abode on the wall, in company with *Scolopendrium vulgare*, and other mural plants. Returning to the road directly after, sharp eyes revealed the tips of the fronds of *Asplenium Adiantum-nigrum* (one of the rarest of the Manchester Flora), which were protruding from the clefts, among the stones at the base of the road-wall, but very small

and stunted in growth. In the same strange habitat, the base of the wall, we shortly after saw *Polypodium Dryopteris*, very luxuriant, though we could only find two plants. There was a wood near from which they might have strayed, but we had not time to explore it. Further on still we saw *Cystopteris fragilis* and *C. dentata*. The commoner Ferns found were *Polypodium vulgare*, *Pteris aquilina*, *Lastrea Filix-mas*, *L. dilatata*, *Athyrium Filix-femina*, *Asplenium Ruta-muraria*, and *Blechnum boreale*; giving a total of fourteen species within twenty yards of the roadside, for two miles in length only.

VASCULUM.

MEDICAGO LUPULINA.

Near Shooter's Hill a curious form of the above well-known plant was observed and sent me by a correspondent; and as this variety has not been recorded as seen before, it is communicated to our readers in hope that it may be a novelty, at least to some of them. I received it about the beginning of August, and about the middle of September in the same year it was still to be found in the same place. If not a botanical curiosity, it is at least a botanical casualty. The characters of this form of *Medicago lupulina* are as follow. It has lax flowers on peduncles which are longer than usual; the calyx-teeth are rather longer than in the usual form; the petals are present, though in a diminutive or abortive form; the legumes are decidedly falcate, though not nearly so well developed as in the falcate Medicks. The seeds are mostly abortive.

The following is from De Candolle's *Prodromus*, *sub voce*. *Medicago lupulina*, γ *unguiculata* (Ser. Mss.), floribus apetalis, leguminibus falcatis vix nervosis stipitatis unguiculatis. In Helvetia circa Longirod, et in Belgio. *Trigonella mniocarpa*, Wallr. ! in litt. *Medicago mniocarpa*, Wallr. ! in litt. M.

PIMPINELLA DISSECTA.

The reverend author of the 'Flora Hertfordiensis' showed me a dried specimen of the above-named plant, which he collected at Flitwick, not far from Ampthill, in Bedfordshire, and which he has preserved in his herbarium. On referring to the 'Flora Bedfordiensis,' 1798, I perceive that the reverend author, p. 68, No. 232, describes this very plant, which he calls *P. dissecta*, with a reference to Retzius' 'Fasciculi Botanici,' iii. fig. 2. Dr. Abbott's description, though brief, clearly defines the above plant from the common form, viz. "All the leaves winged; with many divisions, etc." Dr. Sibthorp, in his *Flora Ox.*, p. 102, gives the following character:—" *P. dissecta*, foliis omnibus pinnatis, *pinnis multipartitis, segmentis subfoliatis acutis*. Between Whitney and Burford, near Henley." Dr. Abbott describes its locality thus: "Dry pastures. Common." This form is entered in Dillenius's edition of Ray's 'Stirpes' thus: " *Pimpinella Saxifraga major, degener seu foliis dissectis*, Hist. Oxon., iii. 284. Hedges, everywhere near Maidstone, Kent; observed by Mr. J. Sherard, in company with Mr. Rand (*Stirpes Brit.* 213)." The accurate Hudson enters this as var. β of his *Pimpinella major*, with the reference to Plot's 'Oxford,' as above, and adds, "In sylvis agro Cantab., Bedford, Leicester, Cant., et alibi. Fl. Aug., 110." In the excellent work of Clusius, p. excvii., there is the following notice of this variety or species. "... In majore autem, tametsi magnâ ex parte foliorum forma non variet (omnia enim in

ambitu serrata sunt, et per alas ordine disposita), unum tamen genus ex atro virentia ea obtinet et splendentia, alia minime; genusque aliud invenitur, cujus folia in lacinias sunt divisa."

Note.—In addition to the above authorities, this form is noticed by Poiret under *P. dissecta laciniata*; by Thore under *P. laciniata*, and by Mœnch under *Tragoselinum dissectum*. The bantling need not be ashamed of its sponsors. E.

KENTISH ORCHIDS.

Notice of some plants, especially Orchids, found in Kent by G. C. Oxenden, Esq.—Mr. Oxenden says: "I have seen some very fine sights this May and June, viz. vast tracts of steep picturesque grass-hills extending for some miles, and throughout their whole length decked and garnished with one or other of the following plants: *Ophrys aranifera* and *O. muscifera*, *Orchis ustulata* (a lovely Orchid) and *Habenaria bifolia*. All this vast range of hills slopes to the south and south-west. The east side of the same range is all forest ground, and it affords in abundance every variety of *Orchis fusca*, from a dull white to a very deep mulberry-colour, and in size over twenty inches. These same woody banks yield a few specimens of the strange *Lathræa Squamaria*, and more to the eastward I find the truly curious *Monotropæ Hypopitys*. Near the place from which I write (Broome Park, near Canterbury), grows the monarch of Orchids, *Orchis hircina*, the Lizard Orchid; and within fifty yards of my own house I have one growing which at this moment (25th June, 1860) is $29\frac{1}{2}$ inches high, and with nearly fifty lizards upon it. Next month (July) will afford me very fine specimens of *Ophrys arachnites*, and if you have never seen the wonderful varieties of this Orchid, they will astonish you. Some of the varieties of the Bee Orchis are also exceedingly curious. In August we get *Hermidium Monorchis* in abundance, very minute, very fragrant, and under the microscope the most beautiful object imaginable. In July and August we have *Epipactis latifolia* and *E. purpurata* in tolerable abundance."—From the 'Gardeners' Chronicle,' September 1, 1860.

In the 'Gardeners' Chronicle' for September 1, 1860, there is a very plain and sensible article on the direction of the roots of plants, illustrated by the roots of *Pothos*, *Monstera*, and *Athurium*, growing in a shady stove at the residence of Mr. W. Saunders, Red Hill, Reigate. We have not room for the article, but merely refer such of our readers as are interested in this subject, to the article above quoted.

Communications have been received from

Frederick Reynolds; A. J. W. Turner, F.H.S.; Rev. R. H. Webb; John Sim; H. C.; Vasculum; B. Carrington, M.D.; N.H.R.Z.; Sidney Beisley; B. M. Watkins; W. P.; Charles C. Babington; J. Sadler; J. R.; A. Briggs; J. B. Wood, M.D., M.R.C.S.; Dr. Windsor; Rev. A. M. Norman; M.; N.; R.

BOOKS RECEIVED FOR REVIEW.

Guide to the Isle of Wight.
The Excelsior.

ORTHOTRICHUM ANOMALUM.

*Notes and Observations on the Orthotrichum anomalum of
British and Foreign Authors.*

By J. B. WOOD, M.D., F.R.C.S., etc.

"Omnium fere Muscorum generum naturalissimum, nunquam dirimendum. Pulchrius vix ullum genus; *difficiliora non multa.*"—Weber et Mohr.

(To the Editor of the *Phytologist*.)

The subject of the following paper having latterly occupied much of my time and attention, it occurred to me that it might possibly have some interest for the Bryological readers of your useful periodical. I could have much wished that my valued and deeply esteemed friend Mr. Wilson, would have undertaken the discussion of this very abstruse and complicated question rather than myself, as from his great research, extensive learning, and vast experience in all matters connected with Bryology, he was much better fitted for the task than one who, with such small pretensions as myself, could possibly be. The very numerous and pressing engagements with which he is constantly occupied, and the delicate state of his health, are, I know, almost insuperable barriers to the attempt. I shall, however, gladly avail myself of the valuable remarks made by him in connection with this subject, and I have no doubt that they will be fully appreciated as they deserve, and have their due weight and influence with your readers.

The object I have in view is, if possible, to elicit further and more extended information upon what appears to me a very interesting subject.

Probably it may be a matter of surprise to some, that so much can be found to be said concerning a Moss, hitherto regarded so common, and *apparently* so well recognized and understood. The issue will, I hope, prove satisfactorily that there is in reality much interest in relation to it, and something yet to learn, more than most suspect, before we shall be in a position to be perfectly certain as to what is actually meant and intended by those authors who have hitherto written respecting it. Possibly the way in which I have attempted (very inefficiently, I fear), to bring this question under review, may be esteemed by some as verging upon rashness and indiscretion; and justly so, for I am too sensibly aware of my own inability

and, indeed, incompetency, for the task, for me to wish to be regarded as any authority upon such matters; neither would I venture to presume to criticize the labours of others who are justly esteemed as pillars of the science, in any manner save that which is most deferential. The subject is one that is full of difficulty, and I approach its discussion with great diffidence: probably it may be found that I have fallen into erroneous misconceptions, or been guilty of false deductions;—if so, all I would ask, is a lenient and indulgent forbearance on the part of those so much more competent than myself, and that they will kindly point out and correct any errors or deficiencies that may occur to them. I am solely actuated by an anxious desire to search out truth, and do what little is in my power to promote the interests of science, and stimulate others to further and renewed investigations upon a subject that already appeared to be all but exhausted.

I shall be extremely obliged for any communications, or illustrative examples, from such of your correspondents as may kindly favour me with them, more especially with specimens collected in Scotland or in the northern or central portions of Europe.—
Yours respectfully, J. B. WOOD.

Broughton, Manchester, Oct. 20th, 1860.

In the investigation of the above subject, I have thought it unnecessary to allude to the descriptions and definitions of the plant as met with in authors previous to the commencement of the present century, for they are so vague and indefinite in general, that but little reliance can be attached to them or any useful ideas derived from them, which might in any way facilitate the inquiry or throw light upon it. I shall therefore commence with the description of the species as we meet with it in Smith's Eng. Bot., and afterwards trace its history, more or less, to the present time. In that excellent work it is described as follows:—

“ORTH. ANOMALUM, Eng. Bot. t. 1423.—*Sp. Char.* Stem branched; leaves lanceolate, keeled, and revolute. Fringe simple. Veil hairy, toothed.—*Syn. O. anomalum*, Sm. Fl. Brit. 1267; Hedwig, Sp. Musc. 162, Crypt. vol. ii. 102, t. 37; Dicks. Crypt. fascic. 4, 6; Turner, Musc. Hib. 94.

“Not rare on old buildings and stones, bearing fruit in Feb. and March.

"We first found it on rocks near Edinbro' twenty-two years ago (1782). It grows in dense perennial tufts of a dull brownish-green. It *agrees with* *O. nudum*, t. 1235, in having no internal fringe, but differs in its revolute leaves and hairy veil, which becomes toothed or torn, and at length loses its hairs by age. The fruit-stalks, *when fully grown*, are *longer* than in most of the genus (!). The lid is *flat*, with a slender beak."

Such were the ideas respecting this species entertained by the accomplished writer of the above description at the commencement of the present century. That there are here strong indications of confusion and error must be obvious on the most cursory reflection. The figure, though badly executed, is sufficiently correct to show that the plant is not *O. anomalum* of the present day, either of Bry. Brit. or Bry. Eur., as is sufficiently evident by the *obovate immersed* capsules. The number of striæ as figured are indefinite; the peristome, consisting of sixteen free distinct teeth, may either represent that of *O. cupulatum* or *O. anomalum* of Br. Eur., but certainly not that of *O. anomalum* of Hook. and Tayl., and of all other British writers. On the other hand, the rather amusing remark as to "*the fruit-stalks when fully grown*" and the *FLAT lid*, coupled with its supposed resemblance to *O. nudum*, would undoubtedly seem to indicate that *O. anomalum* of either foreign or native authors had been seen, although not recognized as distinct from *O. cupulatum*. It is thus quite clear that at the time Smith wrote, the two species were confounded with each other; and it does indeed appear most strange how it came to pass that Smith should quote Hedwig's *O. anomalum* as synonymous and identical with his own, seeing that the one he had figured and described was truly *O. cupulatum*. He could hardly have fallen into this error if he had really seen authentic specimens of the plant described by Hedwig, unless indeed, as has been asserted, Hedwig himself had confounded and misunderstood the two species. The whole matter at this time would appear to have been involved in chaos, which however is not to be much wondered at, considering the obscurity that then existed in the definition of species, and the very vague and unsatisfactory manner in which they were then understood and described. It is however a matter of far greater surprise to find that much of that obscurity in reference to the identity of Hedwig's plant still remains and enshrouds our ideas with a darkness almost as impe-

netrable as that of night, so that even now we are lost in conjecture and vain hypothesis, when we attempt to unravel the conceptions which Hedwig really entertained respecting this species, and without reference to authentic specimens it would appear to be a hopeless task to arrive at any positive and safe conclusions.

That the confusion existing in regard to these two species was at length discerned is rendered fully obvious and apparent by the fact of the editors of the Supp. to Eng. Bot., in one of its earlier numbers, considering it desirable to figure and describe anew *O. anomalum* as distinguished from *O. cupulatum*. This description, in part, I now subjoin, so that we may be the better able to trace the progress of opinion respecting it. The description is as follows :—

“*O. ANOMALUM*, Eng. Bot. Supp., t. 2696.—*Sp. Char.* Stems erect, leaves broadly lanceolate, slightly spreading, straight and erect when dry. Capsule *exserted*, oblong, *furrowed above*. Teeth erect, *connected in eight pairs*, without ciliary processes. Calyptra slightly hairy.—*Syn. O. anomalum*, Turn. Musc. Hib. 94; Hook. and Tayl. Musc. Brit. 2nd edit. 126, t. 21.

“This Moss grows on rocks and walls in limestone countries. It is common in Anglesea and in Orme’s Head. *The earliest account of it as a species* appears in the above-cited work of Dawson Turner, Esq. It was formerly confounded with *O. cupulatum*, from which it is easily distinguished by its *narrow* and conspicuously elevated capsules. A handsome species, growing in small round dense tufts. Stems above half an inch long; leaves of a dark purplish-green, with colourless points, their nerve vanishing above. Teeth of the peristome *white*, erect when dry, converging when moist, never recurved. The obvious mark of this species may be observed in the exserted *cylindrical* capsule, whose peristome is destitute of cilia.”

The figure and description as here given represent with sufficient accuracy and fidelity the *O. anomalum* of Hook. and Tayl., and of all British authors since the time of Smith. There are, however, one or two points that appear to me to be scarcely expressed with that clearness and precision that is desirable. The figure shows six striæ on one side of the capsule, so as to leave us in doubt as to the exact number intended, whether eight or sixteen, and the capsule is described as simply “*furrowed above*.” This omission is of great and essential importance, as upon the

actual number of ribs is made to depend *the* character by which this species is most obviously and easily recognized from *O. cupulatum*. The peristome can hardly be said to be "*white*," it is rather of a pale buff-colour, but the form and *geminate* character of the teeth are correctly given. Having no copy of Hook. and Tayl. Musc. Brit. at hand, to which I can refer, but where, however, the species is described in nearly similar terms, I proceed to notice the description as more recently given of it in Bry. Brit., and which is by far the most carefully drawn up and most correct and intelligible of any that had previously been written in our language. In this description the capsule is described as having *uniformly only eight ribs*, and upon this circumstance is based the second subdivision of the first section of the genus, viz. "Capsule with eight ribs," as distinguishing it from the first, which has sixteen. This particular feature has always been regarded as the grand and essential distinction by which the species could be recognized, it being the most salient and obvious character for that purpose, but from the other species, it is however, kept widely apart by many differences both in form and structure. In all British specimens that have hitherto fallen in my way, with one or two exceptions shortly to be noticed, this feature of eight ribs on the capsule has been found, so far as I know, uniform and constant, and upon it one of the most important characters of the species has been founded, as already noticed.

Bruch and Schimper, the illustrious authors of the magnificent 'Bryologia Europæa,' the paragon of all books on the subject of which it treats, and whose marvellous accuracy of observation and minuteness of detail none will feel disposed to question, unhesitatingly describe this Moss with *sixteen* striæ or ribs on the capsule; and this character is again repeated in the admirable Syn. Muscor. Eur. of Professor Schimper, just issued from the press. In addition to this are other points of difference, essentially at variance with the generally recognized characters of the species as hitherto understood in this country, more especially in the form of the capsule and structure of the peristome. But lest there should be any misconceptions regarding it, I have translated for the benefit of your readers, to enable them to compare it with the descriptions already extant, the one given in the work above quoted.—

"O. ANOMALUM, Bry. Eur.—Stem nearly simple, erect; leaves

erecto-patent or spreading, straight when dry, lanceolate, carinate, reflexed at the margin. Nerve strong, extending to the apex. Areolation minutely punctiform. Vaginula oblong, naked or hairy. Capsule on an elongated pedicel, twisted to the left when dry, *ovate-oblong*, with a *short ventricose neck*, with *sixteen ribs* alternately long and short. Operculum with a short, erect, *obtuse* beak, from a convex base. Calyptra conic-campanulate, stramineous or pale brown, hairy. Teeth of the peristome sixteen, *geminate*, united in pairs in a bi-geminate manner, *ultimately separate, free, almost equidistant*, lanceolate, pale yellow, smooth, perforated in the median line, often entire, erect when dry."

The description in the Synopsis is much the same, excepting that the capsule when dry and empty is described as "versus medium coarctata;" it is in the following words,—"*Capsule much exserted, ovate-oblong, with a spurious or scarcely evident neck (e collo spurio instructa), with sixteen striæ, when dry and empty contracted in the middle. Calyptra brown, hairy, etc.*" Here then it is evident that there exists an irreconcilable discrepancy in the description of the species as compared with that of our native plant, more particularly in reference to the number of striæ on the capsule, its general form when ripe and after the evacuation of the spores, and in the *ultimately separate* and equidistant teeth of the peristome. The circumstance of the different number of ribs assigned to this species by Bruch and Schimper had already been noticed in Bry. Brit. in the following words:—"This species is readily known from *O. cupulatum* by its red, oblong, and exserted capsule, *which we have never seen with more than eight ribs*, though it is said in Bry. Eur. to have sixteen striæ." And yet it does appear somewhat singular that notwithstanding this manifest discrepancy in a character so obvious, the Moss as thus described in Bry. Eur. is quoted as synonymous with that of Hook. and Tayl., and would thus naturally lead to the supposition that the two were identical. To me this has been a source of great perplexity, for I could not avoid suspecting that *two essentially different* species had been and still were comprised under one and the same name. I have on more than one occasion brought this fact under the notice of my friend Wilson, who could give me no further explanation of the matter at that time, than that it was most probably an error of description,—an almost necessary conclusion from our not being then acquainted

with the plant of Continental authors. It would also appear more than probable that a similar misconception of the plant of Hook. and Tayl. exists in the minds of all foreign bryologists, as nowhere, so far as I know, do we meet with any description of the plant in accordance with our views of it in this country, more especially as to the eight-striate capsule. If such a state had occurred, it is singular that it should not have been noted either in Bry. Eur. or in the later Synopsis of Professor Schimper. Such variations, when they do occur, have attracted the observation of authors, as sources of probable perplexity, and have consequently been placed on record. In *O. cupulatum*, for instance, the normal state of which is to have sixteen uniform striæ on the capsule, it occasionally, *but rarely*, happens that it has only eight, and unless we were aware of this fact, it might give rise to much difficulty in determining its correct identity. In confirmation of this I may here mention, that not long ago, my friend Mr. Palgrave, of Liverpool, sent me specimens of a Moss, gathered on *trees* near Bolton Abbey, with only eight ribs on the capsule, but which in all other respects accorded perfectly with *O. cupulatum*, as confirmed by my friend Wilson, to whom I submitted them.

If such a variation had existed in connection with *O. anomalum*,—and why it should not I cannot say,—surely it must have been noticed in a plant whose geographical range is so wide and extensive that it may be truly deemed cosmopolitan. Schimper remarks, when referring to this, “I have received it from Greenland, and also from Algiers;” and yet amongst the innumerable examples that he must have seen from all parts of the world, none would seem to have presented themselves with characters analogous to those found in this country, or at all at variance with the description as given in Bry. Eur. The inference then is all but certain that the plant known and found in Britain has not yet been recognized as a denizen of the Continent; and yet, again, in Bry. Eur., the synonym of Hook. and Tayl. and of Bry. Brit. are quoted without the least hesitation!

Much of the obscurity and mysticism, however, in which this subject has been hitherto involved, is, I am happy to believe, now put in a fair way of being explained, or, at least, greatly modified. In the month of June last, a friend of mine, Robert Luckman, Esq., of this place, was on an excursion in Scotland,

and although he had no botanical knowledge of Mosses, he amused himself in his rambles by collecting for me such as fell in his way or most attracted his attention. When at Aberdour, in Fifeshire, he gathered, "on rocks," near that place, an *Orthotrichum* perfectly distinct from any that I had previously seen, though in general aspect simulating the ordinary form of *O. anomalum*. On a more careful and detailed examination, I felt quite convinced it could be only referred to *O. anomalum* of Bry. Eur., but certainly not to our indigenous plant so called. The *truly oblong*, leptodermous capsule, the pedicel shorter, thicker, and *less twisted*, with its sixteen striæ alternately long and short, when *dry* and *empty* of its spores usually *much contracted* in the middle, almost urceolate, the mouth wide and divergent, the base remarkably ventricose or globoso-ovate, without any evident neck, but terminating abruptly in the pedicel, and the erect, somewhat spreading, rufous, *perfectly free* and *separate* teeth of the peristome, were characters that appeared to me to stamp it as unquestionably the genuine representative of the Continental plant. The difference was so marked between it and our native species, as to be obvious at a glance; I felt quite sure of its true identity, so far at least as could be determined by the description and in the absence of authentic specimens, and that *now* it was clear and manifest to demonstration, that two widely distinct species had, there could be no doubt, been confounded, and were passing under the same name. The question then arose, to which of these did the appellative of *O. anomalum* truly belong? That it could not apply to both was quite certain, and therefore, of necessity, one of them must be deemed a usurper, or have been confounded with some other species with which I was not acquainted. This question, however, as has been already observed, can only be determined by reference to the original specimens of Hedwig, the first founder of the species; most probably it will ultimately be found that the Continental plant and the Aberdour specimens are really those which will establish for themselves by priority the right to retain the name already given, this form being apparently the one most widely disseminated, and, consequently, the one with which Hedwig would be most likely to meet. The Moss hitherto known to us will then become a nameless outcast, and some other appellation, less "anomalous" than it has before borne, will have to be found, by which it may be

known for all time to come. It may, perhaps, be as well here to recapitulate the characters by which it is distinguished, so as to bring the two into more immediate contrast. The capsule is generally rather longer and narrower, paler in colour, slightly *ovate* or subcylindrical, its *base tapering gradually into the fruit-stalk*, thicker in texture, regularly *eight-striate*; the striæ strong, well defined, and deeply coloured in the upper part, uniform in length, becoming gradually thinner and fainter as they descend, ultimately lost in the *tapering* neck; the interspaces are necessarily wider, and, when dry and empty, the capsule is scarcely contracted in the middle, retaining much of its cylindrical form; the mouth is smaller, and less patent; the operculum is plano-convex, concolorous, with a short, blunt beak; calyptra brown, conic-campanulate, and more hairy. The teeth of the peristome are *always geminate, even when old*, and do *not separate* into sixteen single, equidistant teeth, and are somewhat paler in colour, *inflexed* and *convergent* over the mouth of the capsule *when dry*.

On submitting the Aberdour specimens to my friend Mr. Wilson for his opinion respecting them, he was immediately struck with their great dissimilarity to anything he had previously seen, so far as he then knew, and at once admitted them as essentially different from our *O. anomalum*, making at the time the following observation:—"I do believe you have at last got hold of the genuine *O. strangulatum* of Muhlenberg and Palisot de Beauvois." This was certainly a new idea to me, for I knew but little of that species excepting from the remarks made in Br. Eur. respecting it, and which I here transcribe:—" *O. strangulatum* of Muhlenb., etc.; *appears* to be identical with *O. cupulatum*; we have seen small specimens of the var. β *riparium* which *seem* to accord perfectly with the figure and description as given by Schwægrichen of this American Moss." On referring to Bridel, we found the characters as there given of this species to agree tolerably well with the specimens from Aberdour, the greatest discrepancy being in the length of the fruit-stalks, which are described as "*very short*." We, however, arrived then at the conclusion that it was most probably referable to that species, and that ultimately it might be found that *O. anomalum* of Bry. Eur., and *O. strangulatum* of the American botanists, were very probably identical.

It would indeed seem that there were some circumstances

favouring this view of the matter, for it is pretty clear that Bruch and Schimper had *never actually seen* specimens of the latter, and that, consequently, they might inadvertently have adopted erroneous views or conclusions respecting it. It remains, however, to be proved that the species they describe is essentially distinct from it, and that their plant is really and incontestably the veritable *O. anomalum* of Hedwig, as they assert that it is. We shall then be placed in a much more favourable position as to the recognition and determination of our native species, and as to whether it will be able to hold its position, or give place to some other. Until this is done, the whole subject is one that is filled with perplexity, and surrounded with difficulties apparently insurmountable. It is, however, only by "well ventilating" the matter, as observed by my friend Wilson, that we are at all likely to be in such a position as will enable us to clear up so very knotty and intricate a question. It is, indeed, one that is full of interest, and well worthy all the efforts and learning that can be brought to bear for its elucidation.

I have pretty strong convictions that the *Aberdour* plant, or, in other words, *O. anomalum* of Bry. Eur., as I believe, will eventually be found to occur not unfrequently, and that the reason why it has not before been detected, will be found in the fact of its having been overlooked or considered only as a variety of *O. cupulatum* with more exserted fruit-stalks. The presence of the *sixteen striae* on the capsule would very much tend to promote this error; in addition to this cause, the fact of the peristome when quite ripe and after the fall of the operculum, being divided into sixteen separate, free teeth, may also have contributed considerably to prevent its recognition. This may probably account for the reputed error and confusion into which Hedwig had been supposed to have fallen, and in a great measure explain away the accusations brought against him by Bridel, and Hook. and Tayl., of "having figured the peristome of *O. cupulatum* for that of *O. anomalum*," as noted in my friend Wilson's letter. But on this peculiarity of the peristome I consider one of the best and most essential characters of the species is justly made to depend. The difficulty, as it appears to me, is *not* to distinguish *O. anomalum*, Br. Eur., from our British species, but from *O. cupulatum*, depending as it does upon the presence of two such obvious characters closely similar in each species. And, as Mr. Wilson observes, the

limits in these two do appear to approximate very closely. There are, however, in my opinion, diagnostic features in both, which must ever keep them separate, and in order that the difficulty in their recognition may be obviated as far as possible, I will briefly allude to those points of difference that exist between the two. In *O. cupulatum* the capsule is always more or less obovate or globoso-ovate, never oblong, with a longer or shorter neck gradually tapering into the capsule, which is much paler in colour, and with paler, thinner, more uniform striæ; the operculum has a longer and more acute beak, springing from a more convex base, of a pale yellow colour throughout, except at its margin, which is *bright red*. The calyptra is always *cupuliform* or *broadly campanulate*, even when the capsule is still young and undeveloped, and generally but slightly hairy; very frequently quite naked, even in the typical state of the species, but more especially in what may be called its aquatic varieties. The teeth of the peristome are considerably longer, paler in colour, and of very thin texture.* In the ordinary form the capsules are always either immersed or slightly emergent, and in that state it is not very probable that any error could arise in the diagnosis; but, as often happens in some of its varieties, particularly the aquatic forms already alluded to, the pedicel becomes more or less considerably exserted (*O. nudum*, Dicks.); then it is that the danger of confounding the two is most likely to occur; but in these states of the plant, if due attention be paid to the general form of the capsule, and the broad, naked, shining† calyptra, there can be but little risk in determining their identity.

Since writing the foregoing, I have, through the kindness of my old and valued friend, Mr. John Nowell, received specimens of *O. anomalum*, Hook. and Tayl., and of *O. cupulatum*, gathered by him in various parts of the kingdom, or sent by correspondents. Amongst the former are some collected in Scotland, where, it is not stated, and in the capsules of some of these there certainly are *indications* of sixteen striæ, the supernumerary ones being however short, faint, and indistinct, as compared with the Aberdour plants. Moreover the form of the capsule, the *longer twisted*

* The areolation of the leaves is minutely and irregularly *hexagonal*; in the other, beautifully and uniformly *punctiform*.

† Olivaceous or rufous.

pedicel (a character just pointed out to me by Mr. Wilson), and the permanently pale, geminate teeth of the peristome, can leave no doubt as to which of the two they should be referred. That it is possible, nay, probable, that variations do or may occur in the number of the striae, I do not for a moment question. But when such is the case I should be much more inclined to regard them as an exception which ought by no means to influence or invalidate the rule.

“Your specimens of *Orthotrichum* from Aberdour have opened up a mine of perplexity which at present seems to increase as I proceed. However, it is always useful in such cases that the subject should be well ventilated, or, as Shakspeare says,—

‘If it were done, when ’tis done, then ’twere well
It were done quickly.’

I most heartily wish this to be so, for at present it is quite a knotty point, and not a recent one either, as you will find on reference to Bridel and Hook. and Tayl. There is indeed a great mass of lore connected with this subject, more than most people (Schimper included) dream of. I hardly know where to begin.

“*O. anomalum* of Eng. Bot. has been referred by Hook. and Tayl. and by Bridel (after seeing authentic specimens) to *O. cupulatum*. Smith’s specimens were gathered on rocks near Edinburgh, and the figure shows sixteen striae on the capsule.

“Furthermore, my brother has gathered for me, on Conway Castle rock, an *Orthotrichum* which *would be* called *O. anomalum*, only that the peristome (a grand point in this case) *insists on its being exactly like that of O. cupulatum!*

“To increase the perplexity, these very specimens (having a rufo-fulvous hairy calyptra, and much exserted oblong-cylindrical capsules) are intermixed with undeniable examples of *O. cupulatum*. It is therefore a fair inference that *O. anomalum* of Bry. Eur. is represented and warranted by these Conway Castle specimens at any rate; but it remains to be proved that B. and S. ‘had the right pig by the ear’ after all. Hedwig and Smith are both charged with having mixed and confounded *O. cupulatum* and *O. anomalum* together.

“Then again we seem to have what would be called by Hook. and Tayl. the *true O. anomalum* (cited by Schimper unquestioned in Bry. Eur.) with an *eight-striate* capsule and the *peristome* in

eight divisions, the teeth very unlike those of *O. cupulatum* both in composition and in texture. This will suffice at present to show that the question is full of difficulty.

“As to *O. nudum* of Eng. Bot., cited by B. and S. as their variety γ *riparium* of *O. cupulatum*, Turner’s herbarium shows it to be *O. Sprucei*, and I can well believe that the figure in Eng. Bot. was taken (badly) from that species. Smith was not the man to be very nice in discrimination, and was one of the people complimented by Bridel in Bry. Univer. thus:—“*Britannis quibus affinitates clarius elucet, quam discrimina;*” consequently *O. strangulatum* could not have fair play in this country, but was undeservedly suppressed, or *strangled* outright, whereat Schimper must now smile, for he is in the same mess deliberately. Let us therefore avoid, if possible, making a similar hash. It seems at present as if *there really* were an intermediate species referable to *O. strangulatum*. If not, we may begin to doubt whether the boundary line between *O. cupulatum* and *O. anomalum* is as well defined as bryologists have laid it down, in respect to the peristome, etc.

“I remember being bothered with the Conway Castle specimens before, but at a time when I could not comfortably go into the subject, and so left it unsettled. I am not sorry that you have brought it again under review, for it deserves investigation, and we, I think, are the very people to take it up, and this is the time to do it. For my part, I must study and examine much more before I can come to a safe and satisfactory conclusion.

“Bridel and Hook. and Tayl. charge Hedwig with giving the peristome of *O. cupulatum* for that of *O. anomalum*, in the Stirpes, vol. ii. t. 37, after having correctly given the *true* peristome of *O. anomalum* in Frond. Musc. Probably there *really* was a jumble on the part of Hedwig.

“The Aberdour specimens differ from the Conway Castle specimens in the red peristome, etc., and perhaps also in the *greater strangulation* of the fully ripe capsule, but my Conway specimens were gathered too soon (April) to decide this point.

“I believe that we have an *Orthotrichum* (called or united with *O. anomalum*) which preserves an eight-striate capsule under all circumstances, and which *may be* distinct from the species given in Bry. Eur., and it will be strange enough if this does not establish its claims (first named by Hook. and Tayl.) to be called the veritable *O. anomalum*.

"I expect however that the Scottish *O. anomalum* will be found to correspond generally with your specimens from Aberdour. I have the same thing, I believe, from the Abbey Craig, near Stirling, gathered by the late Dr. Lyle, but in a state much past maturity."—*W. Wilson, in litt. ad J. B. W.*

"The pedicel in *O. anomalum*, H. and T., is twice as long, and twisted.—*W. W.*"

Extracts from a Letter to J. B. WOOD, from Dr. WM. P. SCHIMPER, Professor of Botany at the Academy of Strasburg. (Translated from the French.)

"My dear Sir,—I have received both your letters, which have, I assure you, afforded me the most lively pleasure and gratification. Immediately after the receipt of your first communication, I applied myself at once to the study and careful examination of all the *Orthotricha anomala* (so called) in my herbarium. In this task I was engaged during the whole of last week, and at the expiration of that time had not entirely completed my researches. This investigation has however led to results the most important and interesting for the Bryological Flora of Europe. In addition to your species, (the one from Aberdour,) which is *evidently distinct* from *that of Bry. Eur.* and which is in fact *the one most widely distributed* over the Continent of Europe, I *have established* the existence of *two new species*, both of which are peculiar to Norway. I have also most rigorously and carefully determined *O. Pylaisæi* from authentic specimens sent to me by De la Pylaie himself, and have moreover established *its* essential difference as *a species* from *O. Breutelii* of Hoppe, with which Müller had united it, and which is truly a good species, as is also *O. Barthii* of Lindblom (?). We have then now, as you will see, *no less than six distinct species* in the section including *O. anomalum*, instead of *one*! I am perfectly satisfied that these six species are all to be met with in Europe, and have no doubt of their validity. In the next parcel of Mosses which I hope soon to have the pleasure of sending you, I will enclose specimens for you, illustrative of each. As to the *O. anomalum* of *British* authors, I have also found in my collection some examples of it, gathered on the Continent, more particularly in the south of Europe and near Strasburg; but in them the peristome is not so regularly developed as in the English examples

which you have sent. The eight cilia of the INNER *peristome* are however always present, although shorter and somewhat less regular. These cilia are invariably wanting in our common species, and in it the capsule has uniformly sixteen *striae*, and the leaves shorter, less acuminate, and at the same time less rigid.

“Nov. 11, 1860.

“W. P. S.”

Plants of Lindores Abbey, near Newburgh, County of Fife.

By JOHN SIM, A.B.S.ED.

The middle of October is not the most favourable season of the year for collecting or observing the floral treasures of our country, yet to the botanist, the lover and admirer of the Great Creator's handiworks, no season of the year is entirely devoid of interest.

On the 18th of the present month I took train from Perth to Newburgh (a distance of eleven miles and a half), in order to visit a medical friend, and get some knowledge of the Flora of the “kingdom of Fife,” as far as my botanical friend's researches had been extended. The abbey, or rather ruins, of Lindores is situated about half a mile eastward of Newburgh, and is a most extensive mass of ruins, built of a sort of reddish sandstone, and amply ornamented with the common Ivy. The parts of the walls still standing are of prodigious thickness, and the entire building covers, I should suppose, nearly three acres of ground.

But it was not for the purpose of admiring its massy architecture or viewing its “ivy-crowned turrets, the pride of past ages,” that led my steps thither; it was to behold the *Scolopendrium vulgare* growing on its walls. At this an Englishman and Irishman may smile, and say, “Well, surely this plant is no great rarity.” But, candid reader, let me tell you, that as far as my knowledge and experience extend, we have few rarer plants in Scotland. I am well aware that it is one of the commonest Ferns in many parts of Ireland, but in Scotland it is rare and local.

I found it growing, but neither very luxuriant nor in great quantity, on two different places, in both cases on the east sides of these ruinous walls. I also detected a few luxuriant plants of *Parietaria officinalis*, another rare Scottish plant, also extremely abundant in Ireland, especially about Limerick. I have never seen it in Scotland, save on the ruins of the abbeys of St. Andrew's and Lindores, in neither place plentiful. Among the ruins of

Lindores abbey I saw some fine plants of *Scrophularia vernalis*, and it likewise occurred at the roadside in several places near to the abbey. This is a rare and disputed species, but whatever may be the opinion of botanists regarding its claim to be native, in my own mind I am quite satisfied that the plant is truly indigenous, and indeed (at any rate) not rarer (if so rare) as the two plants just quoted. *Scrophularia vernalis* is found in several places in Scotland, as at Glen Farg in the Ochils, in Ayrshire, abundant on Moncrieffe Hill, and among and near the ruins of Lindores Abbey. The two latter stations I confirm by personal observation, the two former from individuals with whom I am acquainted.

Respecting this plant I must bear my unflinching testimony against its biennial duration as recorded by most of our older writers of the British Floras. This is a most egregious mistake, and seems not to have been detected until the excellent Floras of Babington and Hooker and Arnott made their appearance. These authors most correctly have entered it as perennial, and perennial it is, and no mistake, as confirmed by all the plants of this species at Lindores Abbey. I also noticed among the ruins *Malva sylvestris* and *M. moschata*, the former a scarce plant in this neighbourhood, and further north still scarcer.

Passing from the abbey southwards, for about a quarter of a mile, at the foot of an old stone dike by the margin of a purling stream, we observed several fine plants of *Verbascum Lychnitis* hardly out of flower. This is a plant far from being common, as far as I know, in any part of Britain or Ireland. It here grows near the foot of a huge frowning precipice of rock, called Clatchart Craig, forming part of the Ochil range of hills, which begins near Stirling and ends several miles below Newburgh. They are in general of moderate elevation, yet being broken in many places by transverse glens and deep ravines, afford to the practical botanist many rare and interesting plants. The glen called Glen Farg in particular abounds in botanical rarities. *Dianthus deltoides* is a frequent plant on the sheep-pastures and rocky knolls of the Ochil hills. My botanical friend informed me that *Reseda lutea* grew by the roadside near to Newburgh, and that the Loch of Lindore, about two miles south-east of Newburgh village, produced *Nymphæa alba* and *Nuphar lutea*, and its bank *Lythrum Salicaria*, a very rare plant in Scotland except in the west Highlands.

I was greatly struck with observing in the border of a field near to the old Abbey an enormous Pear-tree. It is about four feet from the ground, fifteen feet in circumference, and must have stood the storms and tempests of many centuries; it was partly decayed, but still capable of bearing fruit. Have any of our botanical friends seen a larger Pear-tree than this?

Bridge End, Perth.

Bryology of the Neighbourhood of Oxford.

By H. BOSWELL.

(Continued from p. 347.)

**Tetraphis pellucida*. "Shotover Plantations," Sibthorp.—I have failed to find it.

Atrichum undulatum. Sandy banks and thickets; Shotover Hill; Headington-Wick Copse; Bagley Wood, etc. October, December.

Pogonatum nanum. Shotover Hill; Bagley. October, December.

Pogonatum aloides. Shotover Hill; Bagley; near Henley. November, December.

Polytrichum commune. Shotover Hill. Variety *minus*, Shotover Hill; Bagley Wood. Fruit, May and June. The barren plant is frequent.

Polytrichum juniperinum. Shotover Hill; Bagley Wood. May.

Polytrichum piliferum. Shotover Hill; Wootton Heath. No fruit.

Aulacomnion palustre. Bagley Wood; near Birch copse; with *Sphagnum cymbifolium*, etc. Barren.

Bryum nutans. Sandy ground, among bushes; Shotover Hill; Birch copse; Bagley Wood, in company with the last. May.

Bryum albicans (*Wahlenbergii*). In a wet spot, on Shotover Hill. Barren.

Bryum carneum. Moist hedge-banks, Shotover Plantations; Hincksey Hills; sides of drains in Bagley Wood and Bullingdon Bog. March, April.

Bryum pseudo-triquetrum. Bogs under Bullingdon and Headington-Wick Copse. Fruit, May and June.

Bryum pallens. Bogs under Bullingdon, in a wet spot whence turf had been dug. May, June.

Bryum pendulum (*cernuum*). Stone bridge by the Cherwell, near

Summertown; sluice near the weirs; scarce, and mingled with *B. cespititium*. May.

Bryum intermedium. Shady old wall, Rose Hill; with *B. cespititium*, *Didymodon rubellus*, etc.; scarce. Fruit, autumn.

Bryum bimum. Old timber in the Cherwell, near King's Mill; small form of the plant. May.

Bryum capillare. Wall near Elsfield church; roots of trees, Bagley Wood; Willow by the Cherwell, near Islip, etc.; frequent barren. May, June.

Bryum cespititium. Walls, etc.; common. April, May.

Bryum atropurpureum. Walls by the road near Noke; Islip; near Bessilsleigh. April, May.

Bryum argenteum. Walls, gravelly banks, roofs, etc., common; sometimes barren like *B. cespititium*. Autumn, winter.—The *Bryum julaceum* found by Dillenius on “the walks of the Oxford Botanic Garden,” was probably a state of *B. argenteum*: vide Eng. Bot. under *B. julaceum*.

B. roseum. North side of Shotover; near Stow Wood; Headington-Wick Copse; Birch copse. No fruit.

Mnium affine. Bullingdon and Headington-Wick Bogs; moist woods and hedges occasionally, but always barren.

Mnium rostratum. Moist sandy banks, Shotover Plantations, with *Marchantia conica*. April.—This is probably the *M. cuspidatum* of Sibthorp. I have not met with the real *cuspidatum*.

Mnium hornum. Woods, etc.; frequent, but usually barren; in fruit, and very fine at Birch Copse, growing with *Athyrium Filix-fœmina*. April.

Mnium undulatum. Woods and banks, abundant in a barren state; fruit, sparingly in a copse near Water-Eaton.—A very handsome Moss, rarely found in fruit. April.

Mnium punctata. Shotover Plantations; Headington-Wick Copse; near Chilswell Farm. Barren.

Funaria hygrometrica. Walls, etc.; common. April.

Physcomitrium pyriforme. Not common; Binsey Lane, Hincksey Hills; Bagley Wood, in drains; south side of Shotover Hill. April.

Bartramia fontana. South side of Shotover Hill; Bagley Wood. May, June.

Bartramia calcarea. Bullingdon Bogs, with perigonia and one

capsule; sluice by the canal, near Yarnton; barren. June, July.

Bartramia pomiformis. Sandy bank, side of Bagley Wood. March, April.

**Splachnum ampullaceum*. Bog under Headington-Wick, *Sibthorp*.

Fissidens bryoides. Shady banks; Shotover; Bagley Wood. January, February.

Fissidens adiantoides. Bog under Headington-Wick, fine; Hincksey Hills. November, January.

Fissidens taxifolius. Clayey banks; Wytham Wood; Shotover Plantations; Grave-Hill Wood, near Bicester; Headington-Wick. January, February.

Leucodon sciuroides. Trees; frequent. Barren.

Antitrichia curtipendula. Bagley Wood, on one or two trees; scarce. April.

Anomodon viticulosus. Frequent about the stumps of Ash-trees; fruit near Cumnor; Godstow copses, fine; Stanton St. John's. November, January.

Isothecium myurum. Headington-Wick Copse; Bagley Wood; Stanton St. John's; Grave-Hill Wood. November, December.

Isothecium alopecurum. Woods and hedges; frequent, but rather rare in fruit. November, December.

Climacium dendroides. Bullingdon Bogs; small form at Stow Wood. No fruit.

Leskea polycarpa. Trees by the Isis and Cherwell, in several places. June.

Leskea sericea. Trees, stone walls; not very common in fruit. November, December.

Hypnum lutescens. Marly banks, etc; frequent barren; Bagley Wood, in fruit. December, January.

Hypnum populeum. Trees; Wytham Wood. January.

Hypnum velutinum. Trees, hedge-banks; Shotover, Stow Wood, etc.; frequent. November, December.

Hypnum rutabulum. Woods, hedges, old walls; common. November, December.

Hypnum piliferum. Near Stow Wood; Shillingford Hill. No fruit.

Hypnum praelongum. Woods; fruit not common. December.

Hypnum Swartzii. Hedge-banks, etc. No fruit.

- Hypnum striatum*. Fruit; Headington-Wick Copse; Grave-Hill Wood; near Cumnor Hill. December.
- Hypnum ruscifolium*. Stones, in water, occasionally. Nov., Dec.
- Hypnum confertum*. Walls, and about trees; not unfrequent. Fruit, November, December. Variety with leaves secund, like *H. cupressiforme*, at Shotover Plantations.
- Hypnum murale*. Stones and stone walls: Headington; near Joe Pullen's tree; Rose Hill. November.
- Hypnum serpens*. Trees, etc.; common. April, May.
- Hypnum riparium*. Half-inundated trees by the Isis and Cherwell. Fruit, April, May. A large, barren state is found more frequently of the two, growing in wet meadows, etc.
- Hypnum stellatum*. Bogs under Bullingdon. May.
- Hypnum chrysophyllum*. Stone pit in Blenheim Park, with *Encalypta vulgaris*. Barren.
- Hypnum cuspidatum*. In fruit at Bullingdon, Bagley Wood, etc.; very common, barren. April, May.
- Hypnum Schreberi*. North side of Shotover Hill; Bagley Wood. No fruit.
- Hypnum purum*. Hedge-banks, etc.; common. No fruit.
- **Hypnum abietinum* is said by Dillenius to have grown on Hincksey Hills, ("in collibus pone Hincksey,") but I have not succeeded in finding it.
- Hypnum tamariscinum*. Woods, etc.; common, barren.
- Hypnum splendens*. Shotover Hill; near Stow Wood, etc.; Bagley; Jenny Bunting's Parlour, etc. Barren.
- Hypnum triquetrum*. Woods, abundant; fruit rare. Headington Wick; Grave-Hill Wood. December.
- Hypnum squarrosum*. Banks, grassy places. Barren.
- **Hypnum fluitans*, recorded by Sibthorp, is a doubtful species. I have not seen *fluitans* of Bryol. Brit., and by *H. aduncum* he perhaps refers to *H. commutatum* or *H. condensatum*.
- Hypnum filicinum*. Fruit at Bullingdon; frequent in wet places in a barren state, and variable in aspect. April, May.
- Hypnum commutatum*. Bog under Headington-Wick Copse, growing in a pit; barren. It is probably this referred to by Sibthorp as *H. Crista-castrensis*, some states of it bear a certain degree of resemblance to that species. The real *H. Crista-castrensis* is a plant growing in alpine Fir forests, not likely to occur here.

Hypnum condensatum (*H. commutatum* β). Bogs under Bullingdon, in fruit; Headington Wick; near Stow Wood; near Wootton, barren. May.

Hypnum molluscum. Fruit at Headington Wick; not unfrequent in a barren state. November, December.

Hypnum cupressiforme. Common about trees, and very variable; not very generally in fruit. Variety *filiforme*, Powder-Hill Copse. Variety *lacunosum*, Headington-Wick Copse; Chalk Hills, near Goring, barren. October, December.

Hypnum resupinatum. About trees, with the last and other species; fruit rare: Bagley Wood, fine; Grave-hill Wood, near Bicester. November, January.

Hypnum denticulatum. Shotover Hill; Headington Wick; near Wootton. Fruit scarce. Summer.

**Omalia trichomanoides*. "Shotover Plantations."—I fail to find this.

Neckera complanata. Fruit, Stanton St. John's, Grave-Hill Wood, Bagley Wood, etc.; common in barren state. Winter.

Neckera crispa. Woods near Goring and Streatley; barren. (Stokenchurch, *Sibthorp*.)

Cryphaea heteromalla. Trees, always very sparingly; between Summertown and the Cherwell; edge of Bullingdon Bog; Hincksey Hills; Bagley Wood; Hill Copse, near Stanton St. John's. April.

Fontinalis antipyretica. Stones in the river; not uncommon, barren.

It will be observed that I have placed *Hypnum condensatum* as a species, a rank which I believe the opinions of bryologists now incline to concede to it. To me it appears fully distinct from *H. commutatum*: both grow here under precisely similar conditions, though in separate localities.

Trifolium hybridum. (*T. elegans*, *Savi*.)

This elegant species was noticed by Mr. Hudson in the first edition of his excellent 'Flora Anglica' as a variety of *T. repens* and localized about Peckham and Battersea (" β in pascuis humidis prope Peckham "). In Withering's Bot. Argt. vol. iii. p. 647, edit. 1796, there is the following notice of the same species:—

“*Trif. repens hybridum*, Hudson, on whose authority it stands as an English plant, but its existence as such wants further confirmation. Mr. Hudson mentions it as growing in moist pastures near Peckham and Battersea.”

Sir J. E. Smith, in his ‘English Flora,’ vol. iii. p. 299, gives distinctive marks whereby this plant may be known and separated from *T. repens*; viz. *T. repens*, has prostrate creeping stems, round and smooth, internally solid, by which character all the varieties are essentially distinguished from *T. hybridum*, Linn. Both Hudson and Withering describe this Trefoil as a perennial.

In Kittel’s ‘Deutschlands Flora,’ *T. hybridum*, Linn., is placed after *T. caespitosum*, which follows *T. repens*. This author adds the synonyms *T. Michelianum*, Savi, and *T. elegans*, Savi.

Cosson and Germain, in their accurate ‘Flore des Environs de Paris,’ distinguish *T. elegans*, Savi, from *T. Michelianum*, Savi, and supply distinctive characters.

The following are the chief marks of this species:—*T. hybridum*, L. Stems ridged and furrowed, smooth, branching, slightly hollow, leafy. Leaves on long sulcate petioles, with membranous-herbaceous, entire, acuminate stipules; leaflets rhomboid, with setaceous teeth. Heads globose without an involucre; flowers rose-coloured and white: when unexpanded they are pure white and erect, when fully expanded rosy and reflexed; calyx-teeth equal, setaceous. Legume flattened oblong, with 2–3–4 seeds. *Note.* The heads of flowers are larger than in *T. repens*, and the peduncles are longer than the leaf-stalks and leaves.—Wandsworth Steam-boat Pier, Battersea, and Royal Hospital, Chelsea; August, September, 1860.

This species has been observed during several seasons, especially about Wandsworth and Battersea, and it is probably not uncommon, as an agricultural fodder plant, in many parts of the country. Its herbage is nearly as luxuriant as that of *T. pratense*. It probably owes its station at Wandsworth, etc., to this cause, viz. to its being a fodder plant, and the seeds have been casually or accidentally conveyed hither. It can hardly be considered as more than a half-naturalized species; but though this be its status, it should not be left unnoticed, nor undescribed. The plant, like many others of exotic origin, is forcing itself on our notice, and “will be seen whether we will or no.” While botanizing with a friend on the hills about Sanderstead, Surrey, we picked up some

examples of *T. hybridum* in a clover-field between the church and Ribble downs. We might have seen more if we had looked for them; but as we were in quest of more interesting plants than *cultivated Trefoils*, we did not delay in the clover-field.

To use the nomenclature of geographical botany, the plant in question may take rank, if this can be called rank, among the casual stragglers which have a very uncertain and limited distribution through cultivation; but it will be yet perhaps centuries before it is dignified with the honoured name of colonist, denizen, or some one or other of the names of the numerous categories invented by phytogeographers.

It is at least a century since this species claimed and obtained a charitable notice from the father of British systematic botany; how many hundreds or thousands of years must elapse ere it is entitled to take rank in some one or other of the above named or implied classes?

Let botanical geographers answer this question, if they can.

I.

Campanula rotundifolia. By F. Y. BROCAS, *Botanist.*

This form of the commonest of our *Campanulas* abounds by the roadsides about Horsham, in Sussex, and as it grows everywhere in the above-said places, it is unnecessary to enter its special localities.

The root of this variety is very large, with a well developed crown; the latter is furnished with a more than usually numerous tuft of radical leaves on long filiform petioles. These root-leaves are cordate at the base, lobed or toothed, of all sizes, from one-tenth of an inch to an inch in diameter. The stem-leaves are like those of the common form.

The stems are stout and branched, but not at all like those of *C. patula*, nor like any other *Campanula* of British growth except *C. rotundifolia*. They are from two to four feet high, with numerous long slender branches which bear a multitude of flowers.

The prominent difference between the Horsham plant and the common form consists in the numerous radical leaves, the tall slender stems, and the paniced flowers.

In 'Historia Plantarum' of the celebrated Clusius there is the following description of a plant called by him *Campanula minor*,

alpina, rotundioribus imis foliis:—"Alunt etiam summa illa juga, præsertim in rupibus et præcipibus, *Campanulæ* vel *Rapunculi* genus, cujus radicales fibræ valde serpunt et vicina loca occupant, subinde geminantes, et novas stirpes procreantes. Habent illæ initio orbiculata fere folia, deinde statim alia angusta confertim nascentia" (one of the prominent characters of our plant). "Caryophylli secundo loco supra descripti foliis adeo similia, ut incautos plerumque fallat, qui interdum cum suo cespite eruunt, Caryophylleum collegisse existimantes. Emergit deinde ex horum medio gracilis cauliculus in multos tenues ramulos divisus, oblongioribus foliolis, nullo servato ordine nascentibus, septus, flosculos e singulis ramulis dependentes proferens, *Campanulæ* sive *Rapunculi* vulgaris floribus forma similes, vel elegante cœruleo colore præditos, vel saturato purpuræ colore, sive violaceo nitentes, vel dilutiore."* Our author concludes with the remark that the flowers are like those of *Campanula minor*, which grows in several parts of Belgium and Germany, in open places and under bushes in woody places, and about the borders of fields.

Terrestrial Orchids. By JOHN LLOYD.

Among botanical cultivators it is a generally received opinion that any plant may be successfully cultivated if the condition under which it exists in a natural state can be made applicable to it under cultivation. The Terrestrial Orchids have long been especial favourites with the botanist, and many attempts have been made to bring them under cultivation, but hitherto with very partial success, the cause of which I take to be is that the periodicity of the plants has not been taken into consideration by those who have attempted to cultivate them.

The period of duration of our British species varies from two to five years; the Bird's-nest and the Twayblade may be cited as examples of the former, whilst the palmate species may be taken as examples of the latter. It should also be borne in mind that no increase can ever be expected from parting of the roots, as they never produce offsets; and as to the fact of a bunch being sometimes found growing together, that is easily accounted for

* Clusius, Plant. Hist. clxxiii.

by assuming that several seeds have germinated in close proximity to each other.

Generally those who have attempted their cultivation have grubbed up some of the largest and best-looking plants which they could find, without any reference to their age, when it could not otherwise happen but that in a year or two they would complete the period of their existence. If the foregoing ideas are correct, it is from seed alone that we must look for any considerable increase of this beautiful tribe of plants.

Last season I requested Mr. Joseph Croucher, of Reigate, to save some seeds of *Orchis* for me, and he sent me seeds of three species. About a month ago I sowed a small seed-pan, mixing the sorts, and reserving the remainder until spring; upon examination yesterday (the 13th November) I find that six plants have already made their appearance. They are about one-eighth of an inch high, and about as large as a horsehair; the skin of the seed adheres to the apex of the single cotyledon, as in the genus *Allium*. I have compared it with the dry seed under a lens, and they correspond exactly. I have now settled the point that the *Orchis* may be grown from seed; the cultivation still remains to be found out; but a few experiments will, I trust, settle that point also. I hope others will take the matter up, which would accelerate the result.

EXTRACTS FROM CORRESPONDENCE.

*A Handful of Wild Flowers from Keston Common or Heath,
gathered on the 28th August, 1860.*

To such of your readers as have historical sympathies, and are not deeply read in the Archæological works of Camden, Hasted, Dunkin, etc., it may be useful to learn, that they may profitably study the remains of Roman greatness in that very remarkable monument of antiquity called Cæsar's Camp, near Keston Cross, beyond Bromley, Kent.

All antiquaries are agreed that this was a Roman station, and the immense rampart and deep fosse, or a small portion of them, are still very visible in Holwood Park, celebrated for being some time ago the country seat of one of England's greatest statesmen and orators.

I have only to tell your readers who delight in fine scenery and

pure air that they cannot spend a holiday better than on Keston and Hayes Common, especially in August, when the *Heaths* and dwarf *Furze* are in full bloom. These plants, the loveliest in Flora's garland, give to the foreground scene its beautiful and picturesque effect. In this spot the Arabian chemist might find the true elixir of health without the aid of his crucibles and other alchemical apparatus. This locality is warmly recommended to all valetudinarians who expect to receive benefit from change of scene, fresh pure air, and moderate exercise.

Keston Common is distant an easy walk from the Bromley station of the London, Chatham, and Dover railway, or the Mid-Kent, as it is sometimes called. The easiest way to go is along Bromley Common on the Tunbridge road, which goes by Farnborough and Sevenoaks. This tract between Bromley and Keston is like many other tracts in England, once common, but now enclosed and cultivated. Keston Common has almost disappeared within the last few years. Its namesake of Bromley probably succumbed to the builder, planter, and cultivator nearly a century ago. A bit of Hayes Common remains, and a charming bit it is. As some people who go far in quest of rural quietness and rustic scenery may not know that there is such a lovely little nook of country scenery within about a dozen miles of the Metropolis, they are hereby invited to go and see it. They will not be disappointed, for there are, even in England, but few prettier views than the source of the Ravensbourne, almost opposite to the gate and lodge to Holwood Park. The view also from the hill on the road to Cudham is very extensive if not very diversified. To the botanist the wild-flowers to be seen here will be a sufficient inducement to visit this part of Kent.

The headspring of the Ravensbourne is surrounded by a stone wall, and it is boarded over about a foot or two under the surface of the water, and the water flows into two ponds, or into the upper and lower reservoirs, if the water be reserved for economical purposes.

On the edge of the road, or on the bank at the base of the park-paling, numerous examples of the Fungus tribe appeared. This season, 1860, has been more congenial to this order of vegetation than to the cercals. Both here and within the precincts of the park, pedestrians even of the plebeian order may enter and disport themselves, to speak poetically, on the soft

moxy, grassy turf, which in this wet season was in perfection, both for colour, softness and springiness. But the Toadstools, as the rustics delight to call these exquisitely beautiful objects of the Vegetable Kingdom, ought not to be passed without a word in commendation of their rich and varied colours and beautiful forms. The orange Chanterelle and the edible one (*Cantharellus aurantiacus* and *C. edulis*) were plentiful. The intense yellow of the one and the more sober buff of the other were examples of as attractive and exquisite colouring as their crisp, wavy margins were examples of the elegance and variety of natural forms.

The sober dull or pale-brownish colour of the large, tall, shaggy Fungus (*Agaricus procerus*) contrasted very strikingly with the beautiful deep scarlet, elegantly spotted with white, of the handsome Fly Fungus (*A. muscarius*). The humbler species of this large genus, for example, the Amethystine Fungus (*A. amethystinus*) and *A. conicus*, characterized by the variety of its colours, viz. bright red, orange, yellow, brown, and black, formed interesting and charming groups of objects.

The most showy or noticeable plants on the gravelly heath, exclusive of the heath itself (chiefly Ling), now in the fullness of its beauty, were the *Ulex nanus*, just beginning to flower; the rigid, narrow-leaved variety of *Hieracium umbellatum*, an elegant plant on Hayes Common and in Holwood Park. Here there are some slender and dwarf forms, bearing only a single flower, and there are others bearing probably a score of bright yellow blossoms. The Golden-rod, *Solidago Virgaurea*, was only beginning to flower, the *Erigeron acris*, not common here, but plentiful a mile further to the south, where the chalk crops out, was very stately and handsome. The examples here are few, but they are good.

The heath plants are procured with little trouble, and though not rare they are sufficiently attractive to deserve notice. The marsh plants, on the other hand, are far more numerous and rarer than those which grow on the dry hard gravelly parts; some of the bog species at least are rarities of an interesting kind, and their value is considerably enhanced by the efforts to procure good specimens, and at the same time to keep the feet in that comfortable condition in which the soldiers of the Parliamentary army were commanded by their sagacious General to keep their powder.

The rarer plants of this place, viz. round about and below the two ponds or reservoirs immediately below the source of the Ravensbourne, are *Drosera rotundifolia*, *Hypericum Elodes*, *Narthecium ossifragum*, *Veronica scutellata*, *Radiola Millegrana*, *Triodia decumbens*, etc.

On the margin of the lower of these pools (reservoirs?), after scrambling through thorny tangled Briars, prickly Brambles, sharp Gorse, and Pettywhin, we were delighted to find that elegant plant *Campanula hederacea*; its flowers were open, and of such deep azure-blue that we were willing to believe that they were absorbing the pure atmosphere of light which surrounded them this fine sunny day. Near this was blooming *Scutellaria minor*, and in juxtaposition *Genista anglica*, the bright yellow blossoms of the latter contrasting agreeably with the sober purplish flowers of its humbler associate. *Blechnum boreale* grew luxuriantly about the edge of a small *Sphagnum* bog into which we looked in vain for *Malaxis paludosa*. These are the chief bog plants worth enumerating, as seen by us; indeed it is rather to be feared that more than one of the many readers of the 'Phytologist' will object to the entry of some of the above-named species, and blame the Editor for giving them so distinguished a place. Though certain of them are rare, they would not have had any place in the historic page if it had not been thought requisite to prefer a claim in behalf of the pretty ivy-leaved *Campanula*, which was fondly conceived to be a discovery. The place where this lovely gem flourishes was believed to be an unrecorded locality. It was thought scarcely becoming that this pretty, modest, azure-hued floweret should appear before the public without an escort suitable to her distinguished rank in Flora's Court.

The concomitant plants are not introduced to play the part of foils to enhance the loveliness of their leader; as prudent matrons hire plain waiting-maids whose charms eclipse not their own; nor as the famous Falstaff marched gallantly at the head of his lean, ragged regiment through Coventry, his humble followers, lean and shabby, served to increase the portliness, gallant bearing, and martial equipment of their captain. The bog plants of Keston or Hayes Common are not entered here for such ignoble purposes.

On the slopes bounding the ravine there grows great abundance of *Lycopodium inundatum*, and a little higher up as great a num-

ber of *Spergula arvensis*, a plant not always found on a heath nor heathy common, nor common of any sort, excepting it be intersected by a road; but which is almost always found in poor, sandy, ill-cultivated cornfields.

A painter might select a more unpromising scene than this for the subject of a picture, a rural one of course; the botanist will not easily meet with a more beautiful and productive spot within not above a dozen miles from London Bridge.

Another visit to this spot when time shall give us a longer stay, will, I doubt not, enable us to find other plants of particular interest to the botanist; but should this slight sketch do no more than record the station or locality of the elegant *Campanula hederacea* (called also, I believe, *Wahlenbergia hederacea*), I trust it will be acceptable to your readers.

I never met with this plant but once before, and then I found it growing near Launceston, Cornwall, at a place called Trebartha; it grew in patches, and the flowers were larger than those of the Keston plant.

*Additions to the Keston and Hayes List; from another
Correspondent.*

“In a boggy part of Keston Common, not far from the source of the Ravensbourne, I discovered yesterday (September 12, 1860) seedling plants of *Lastrea Thelypteris*, and in the same bog there was no end of *Narthecium ossifragum*, *Salix repens*, and *Drosera rotundifolia*. In barer places on the slopes of the ravine there was great abundance of *Lycopodium inundatum*. Here were also *Carex Oederi*, *Eriophorum angustifolium*, *Juncus lamprocarpus*, *Juncus squarrosus*, *Peplis Portula*, *Radiola linoides* (*Millegrana*); *Ranunculus hederaceus*, *Nardus stricta*, and *Potamogeton pectinatus*, var. *setaceus*.”

Note.—The second rarest plant on Keston Common (the first place is assigned to *Wahlenbergia hederacea*) is probably *Lastrea Thelypteris*. The Editor would be obliged to any correspondent who could inform the readers of the ‘Phytologist’ if this Keston Common station be a hitherto unrecorded one for this Fern. The Keston Common station for *Wahlenbergia hederacea* was previously known, but unrecorded.

BOTANICAL NOTES, NOTICES, AND QUERIES.

The Editor of the 'Phytologist' has much pleasure in requesting the attention of all botanists to the following note:—

To the Editor of the 'Phytologist.'

May I request the insertion of the following notice in the next number of the 'Phytologist,' in order that the attention of botanists may be called to the subject?

The recent publication of the Floras of Cambridgeshire and Suffolk has induced me to arrange some materials, which were collected a few years ago, with the assistance of several friends, for a similar work on the Botany of Essex, but before proceeding to print them, I am desirous of obtaining any additional information which can be furnished by residents or occasional visitors, and shall therefore be pleased to receive communications from any who may be kindly willing to help forward the completion of one more of the Floras of the eastern counties. Local lists are always useful for the purpose, and especially so when accompanied, in the case of very rare or doubtful plants, with specimens for verification. Any other information or hints would also be acceptable.—I remain, etc.,

G. S. GIBSON.

Saffron Walden.

PÆONIA MAS VERA.

The following early account of a locality for this rare plant was discovered in a copy of Ray's 'Catalogus Plantarum Angliæ:—"*Pæonia mas vera*, found in Stankhead Wood, about half a mile from Winscham, in Gloucestershire, by Francis Collins, who took up many of the roots and sold them to the apothecaries of London, and left some of the smaller roots to grow again, and sowed of the seeds he then gathered in the same place." The above is published, hoping that some correspondent or reader of the 'Phytologist' will help us to identify the locality, which has been copied carefully from the ancient MS. memorandum found in the above-mentioned work.

W. P.

COMPARATIVE LIST OF BRITISH PLANTS.

Corrections required in the "Comparative List of British Plants," Phyt. n.s. vol. iv. pp. 321 *seq.*—P. 321, left-hand column, instead of *R. Drouettii* read *R. Drouetii*. P. 323, right-hand column, line 29, instead of *Cochl. officinalis* read *Cochl. Armoracia*. P. 324, left-hand column, after *Viola canina*, between it and *V. stagnina*, insert the line—*V. canina*, b., *V. lactea*, *V. lactea*, *V. canina*. P. 324, 3rd column, line 15, instead of *V. canina* read *V. pumila*. P. 326, line 13, in right-hand column, instead of *H. elodes* read *H. Elodes*. P. 327, 3rd column, line 6, instead of *M. sativa* read *M. falcata*. P. 327, line 20, instead of *arvensc* read *arvensc*. P. 327, line 39, instead of *Anthyllus* read *Anthyllis*.

To the Editor of the 'Phytologist.'

Sir,—Mr. Green has lately mentioned a plant found at Grasmere by Mrs.

(not Miss) Cookson, as having been once named *Potamogeton gramineus* by me. I am sorry that he has not received any intimation of my ultimate views concerning it: views founded chiefly upon the examination of specimens most kindly sent by him. The plant in question has not the rhomboidal sepals of *P. gramineus*, but possesses the transversely oval ones of *P. compressus*. It has also the longer and rather clavate peduncles of the latter plant. The difficulty concerning its name arose from its leaves generally not having more than one vein upon each side of the midrib. But a careful examination of the copious supply of specimens sent by Mr. Green, has shown that some of the leaves have the five veins (two on each side of the midrib) usually found in those of *P. compressus*. The veins are all, except the midrib, very faintly marked in these specimens. The plant is therefore the *P. compressus* of Smith, and almost certainly of Linnæus. Closely as *P. compressus* is allied in technical characters to *P. pusillus*, specimens of it are far more likely to be mistaken for *P. gramineus*.

CHARLES C. BABINGTON.

“BOTANIZING IN THE CHANNEL ISLANDS.”

A short paper with this title appeared in the ‘Phytologist’ of October last year. The list of plants found contained two or three species on which I wish to make some remarks and corrections.

Delphinium Consolida: the Larkspur met with was the *Delphinium Ajacis*, and the *D. Consolida* of English authors, but not the true *D. Consolida*. *Papaver somniferum*: perhaps not so, but a nearly allied species; further observation is required. *Enothera biennis*: the *Enothera* referred to I found near the windmill in St. Aubin’s Bay, and although certainly not the ordinary form I referred it as a variety to *E. biennis*; Mr. Baker, however, suggests that it may be the *Enothera suaveolens*, Desf. *Juncus compressus*: not *compressus*, but one of two very distinct forms of *J. cænosus*, which grow together in the Vale, Guernsey. *Herniaria ciliata*, *Chenopodium murale*, and *Festuca uniglumis*, and the true *Viola canina* (*Viola flavicornis*, Sm.), may be added to the list.

ALFRED M. NORMAN.

Sedgefield, October, 1860.

CAMELINA SATIVA.

On the 10th July, 1860, I found *Camelina sativa* growing in tolerable abundance in a field of barley, on Fursdon Estate, in the parish of Egg Buckland, a few miles from Plymouth, and I enclose a specimen then and there obtained. As this plant is not named in the recently published ‘Flora of Devon,’ perhaps you may consider this communication worth insertion in a future number of the ‘Phytologist.’ I can add the following Devonian localities to those given by the Rev. T. F. Ravenshaw:—*Silene anglica*: field near Maristowe House. *Lotus corniculatus*, var. *tennifolius*: hedge-bank between Plymouth and Yealmpton. *Lathyrus Aphaca*: amongst Furze by the roadside between the villages of Knackersknowle and Tamerton Foliot. *Pyrus terminalis*: Fancy Wood. *Carduus acanthoides*: pasture near Yealmpton. *Centunculus minimus*: Roborough Down. *Gymnadenia Conopsea*: Roborough Down.

T. R. A. BRIGGS.

Plymouth, October, 1860.

BIDENS TRIPARTITA AND B. CERNUA. (See 'Phytologist,' vol. iii. pp. 31 and 92).

Mr. Brocas, in vol. iii. p. 31, in reference to the localities of these two species, informs us, as the result of his experience and observation, that they usually grow in separate, distant, or at least distinct localities; and eight stations are given where only one of these plants grows. Both species however grow in or about the margins of several pits or hollows or on very wet marshy spots on Barnes Common. Sometimes *B. cernua* was the only species, and sometimes it was associated with a few plants of *B. tripartita*. The two British species (are there any other species?) differ in the hue of their foliage as well as in the shape of their leaves: *B. cernua* is of a lively light-green; *B. tripartita* has a darker hue, with a purplish or brownish tinge in the colour of its leaves.

Note.—The radiated variety of *B. cernua* is common, or used to be common, about Letchmere, or near Battersea. A.

VERBASCUM LYCHNITIS.

New or Unrecorded Locality.—An example of this rare plant was sent to the Editor of the 'Phytologist' among other plants, specimens of which were also sent from the ruins of the abbey of Lindores. It has been already recorded from two Scottish counties. The county or ancient kingdom of Fife has now to be added to the comital census of this rare species. (See a paper by Mr. Sim on the plants of Lindores Abbey, *supra*, p. 367.)

NOTICE.

Our correspondent Frederick M. Webb, of Birkenhead, is requested to send at his convenience, a list of the semi-naturalized exotics he or his friends find near Birkenhead, and if accompanied with specimens, they will be all the more acceptable. He is further informed that the Papaveraceous plant sent to be named is *Platystemon*, but whether *P. californicum* or some more recently introduced species, could not be satisfactorily made out from the specimen sent. It may be safely said that it, at all events, is not a British plant. There are few plants common to the British Isles and the far distant California. A notice of *Trifolium hybridum* appears in another part of the magazine for this month.

Communications have been received from

Archibald Jerdan; Rev. R. H. Webb; A. G. More; W. M. Richardson; E. M. Attwood; Sidney Beisley; John Sim; J. S. Gibson; W. P.; Walter Galt; W. W. N.; F. M. Webb; B. M. Watkins; J. B. Wood, M.D., F.R.C.S.; John Lloyd; Rev. T. F. Ravenshaw; A.

ERRATA.

Page 337, ninth line from the bottom, for *Hypericum boreale* read *Hieracium boreale*. Page 340, line 16, for letter read latter. Also for J. B. Wood, M.D., M.R.C.S., read J. B. Wood, M.D., F.R.C.S.

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* Mr. Watson, see Supplement to 'Cybele,' calls attention to the omission as a significant fact.

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